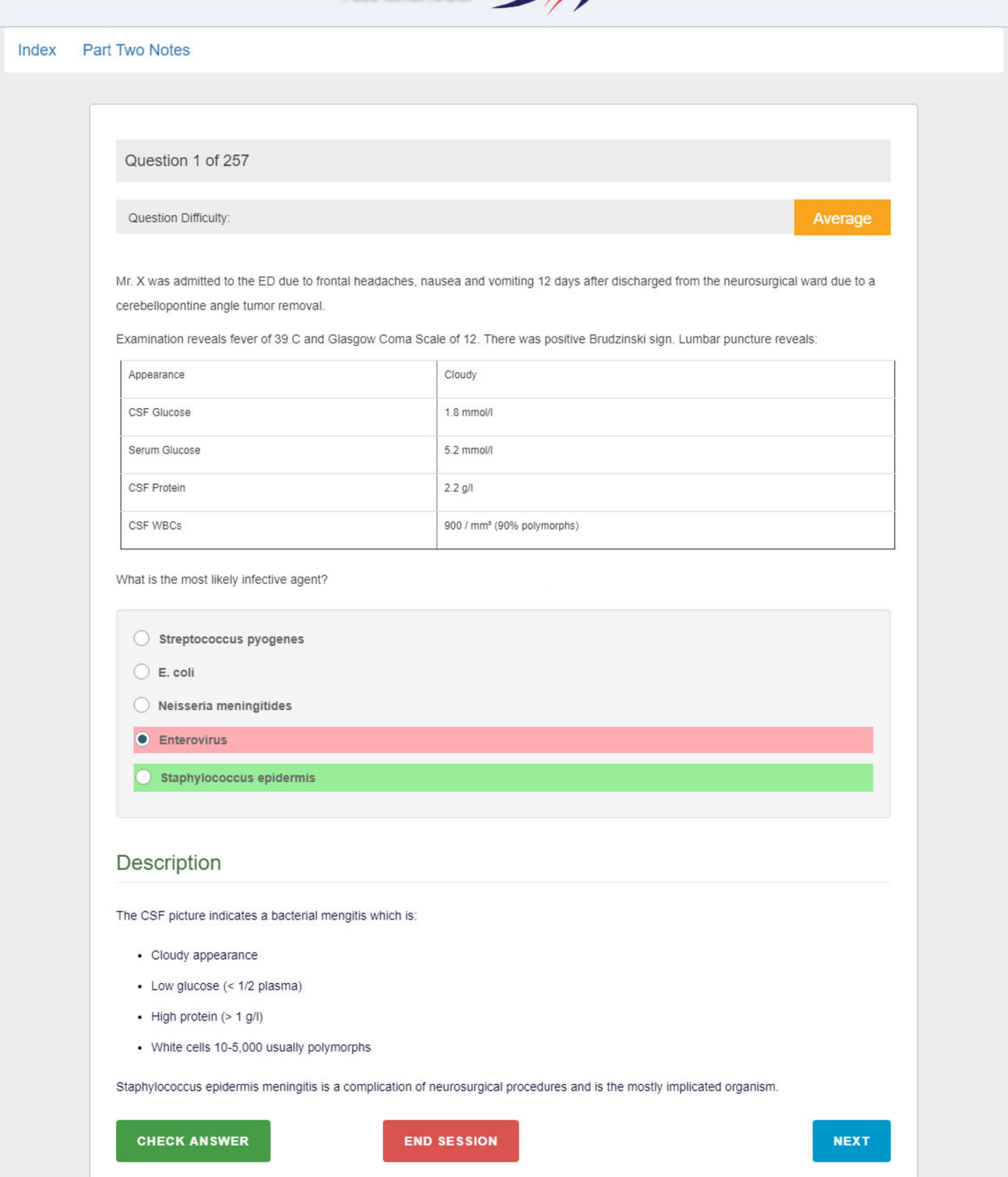


Question 1 of 257

Question Difficulty: **Average**

Mr. X was admitted to the ED due to frontal headaches, nausea and vomiting 12 days after discharged from the neurosurgical ward due to a cerebellopontine angle tumor removal.

Examination reveals fever of 39 C and Glasgow Coma Scale of 12. There was positive Brudzinski sign. Lumbar puncture reveals:

Appearance	Cloudy
CSF Glucose	1.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	2.2 g/l
CSF WBCs	900 / mm³ (90% polymorphs)

What is the most likely infective agent?

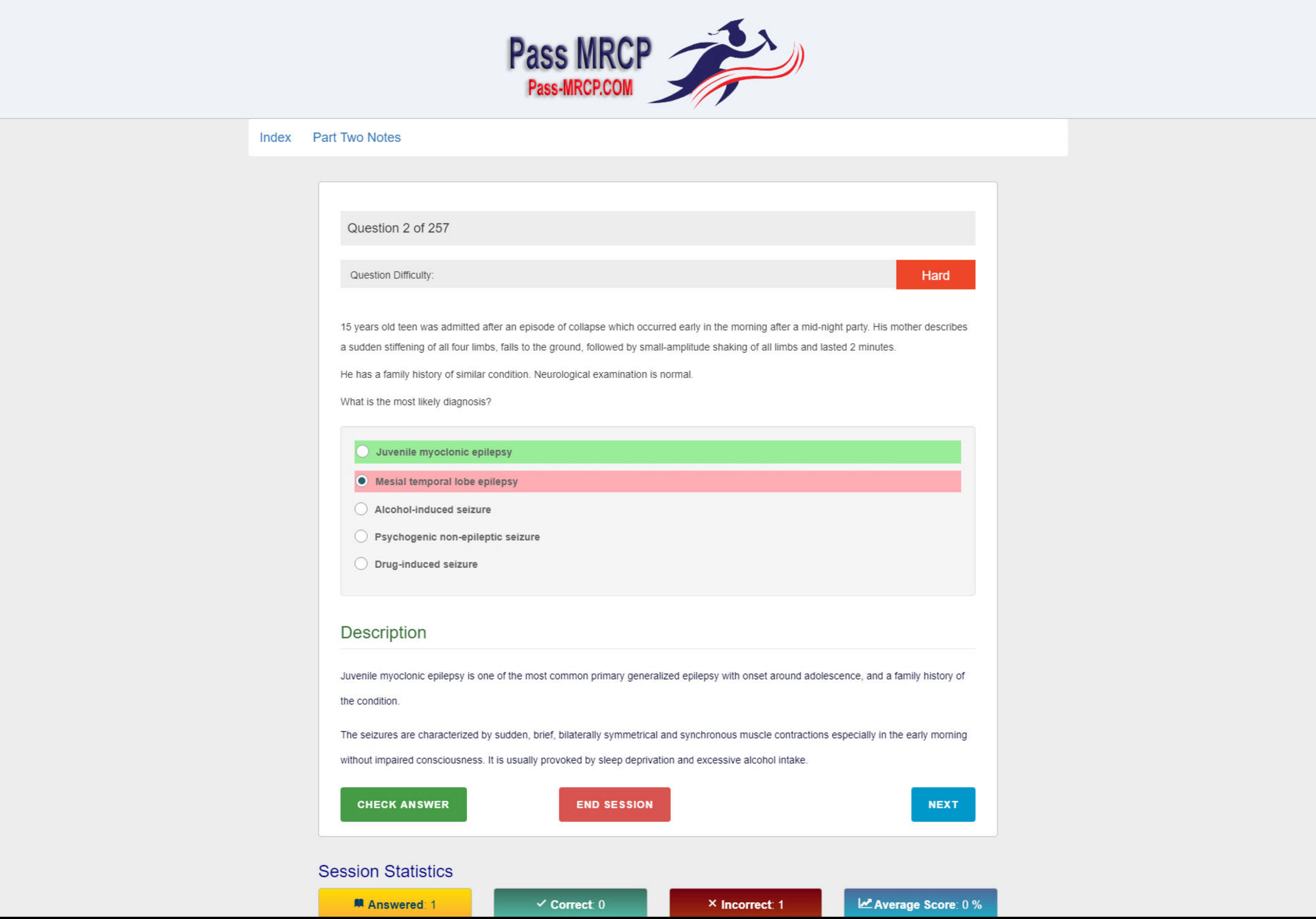
- ○ **Streptococcus pyogenes**
- ○ **E. coli**
- ○ **Neisseria meningitides**
- ● **Enterovirus**
- ○ **Staphylococcus epidermis**

Description

The CSF picture indicates a bacterial mengitis which is:

- Cloudy appearance
- Low glucose (< 1/2 plasma)
- High protein (> 1 g/l)
- White cells 10-5,000 usually polymorphs

Staphylococcus epidermis meningitis is a complication of neurosurgical procedures and is the mostly implicated organism.



Question 2 of 257

Question Difficulty: Hard

15 years old teen was admitted after an episode of collapse which occurred early in the morning after a mid-night party. His mother describes a sudden stiffening of all four limbs, falls to the ground, followed by small-amplitude shaking of all limbs and lasted 2 minutes.

He has a family history of similar condition. Neurological examination is normal.

What is the most likely diagnosis?

- ○ **Juvenile myoclonic epilepsy**
- ● **Mesial temporal lobe epilepsy**
- ○ **Alcohol-induced seizure**
- ○ **Psychogenic non-epileptic seizure**
- ○ **Drug-induced seizure**

Description

Juvenile myoclonic epilepsy is one of the most common primary generalized epilepsy with onset around adolescence, and a family history of the condition.

The seizures are characterized by sudden, brief, bilaterally symmetrical and synchronous muscle contractions especially in the early morning without impaired consciousness. It is usually provoked by sleep deprivation and excessive alcohol intake.

Session Statistics

Answered: 1
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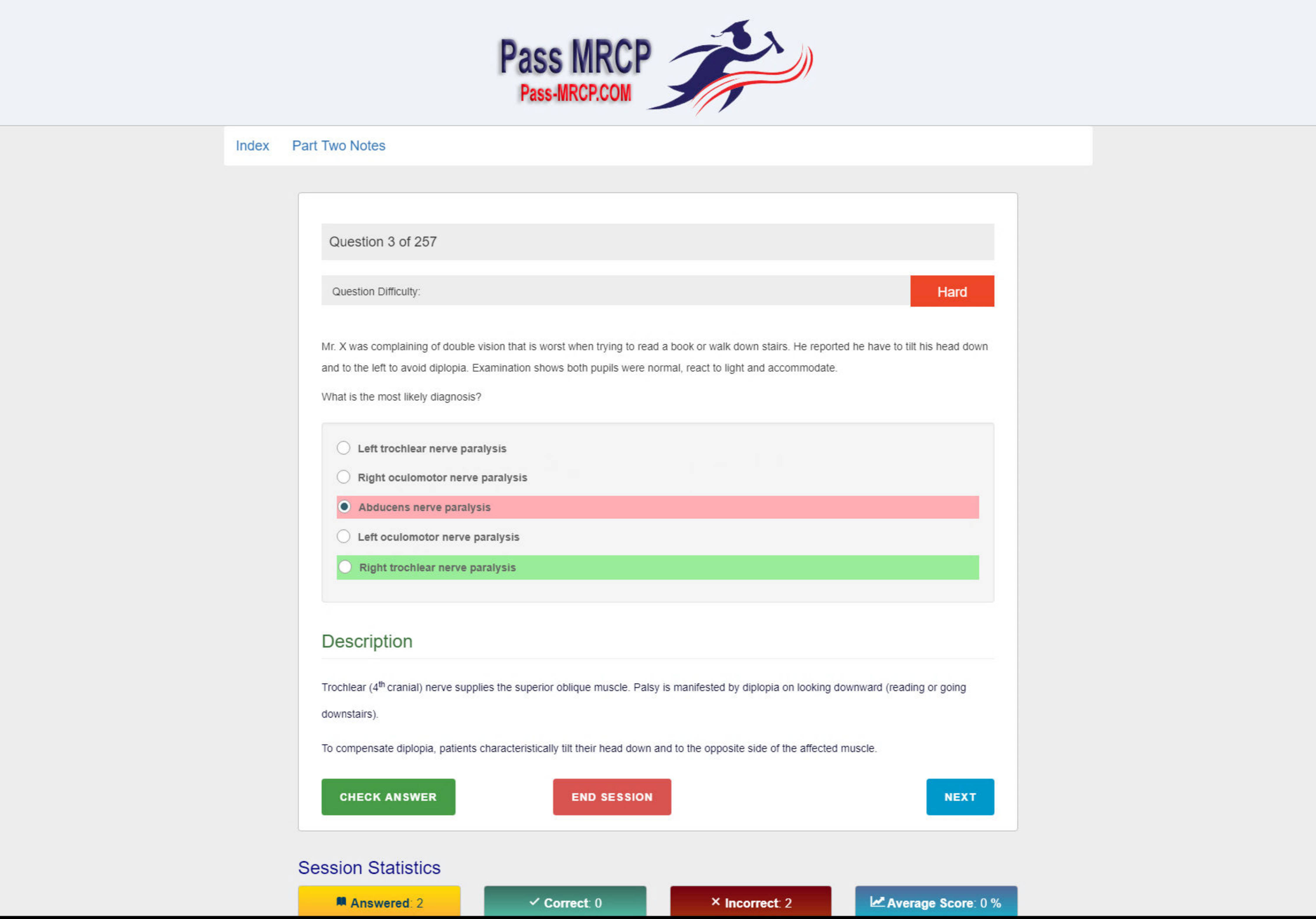
✕ **Incorrect**: 1
Average Score: 0 %



Question 3 of 257

Question Difficulty: **Hard**

Mr. X was complaining of double vision that is worst when trying to read a book or walk down stairs. He reported he have to tilt his head down and to the left to avoid diplopia. Examination shows both pupils were normal, react to light and accommodate.

What is the most likely diagnosis?

- ○ **Left trochlear nerve paralysis**
- ○ **Right oculomotor nerve paralysis**
- ● **Abducens nerve paralysis**
- ○ **Left oculomotor nerve paralysis**
- ○ **Right trochlear nerve paralysis**

Description

Trochlear (4th cranial) nerve supplies the superior oblique muscle. Palsy is manifested by diplopia on looking downward (reading or going downstairs).

To compensate diplopia, patients characteristically tilt their head down and to the opposite side of the affected muscle.

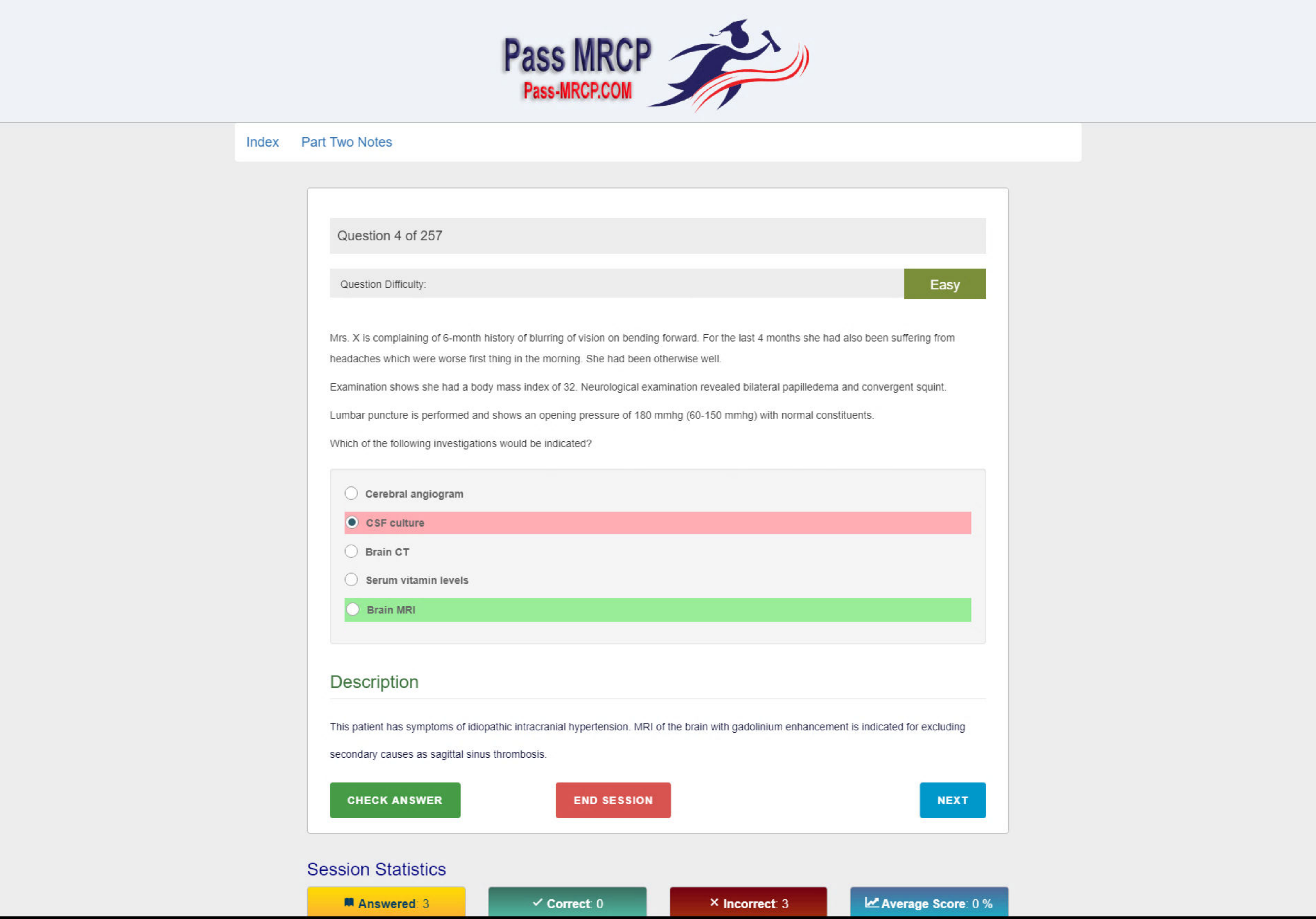
Session Statistics

Answered: 2

✓ Correct: 0

× Incorrect: 2

Average Score: 0 %



Question 4 of 257

Question Difficulty: Easy

Mrs. X is complaining of 6-month history of blurring of vision on bending forward. For the last 4 months she had also been suffering from headaches which were worse first thing in the morning. She had been otherwise well.

Examination shows she had a body mass index of 32. Neurological examination revealed bilateral papilledema and convergent squint.

Lumbar puncture is performed and shows an opening pressure of 180 mmhg (60-150 mmhg) with normal constituents.

Which of the following investigations would be indicated?

○ Cerebral angiogram
● CSF culture
○ Brain CT
○ Serum vitamin levels
○ Brain MRI

Description

This patient has symptoms of idiopathic intracranial hypertension. MRI of the brain with gadolinium enhancement is indicated for excluding secondary causes as sagittal sinus thrombosis.

Session Statistics

Answered: 3
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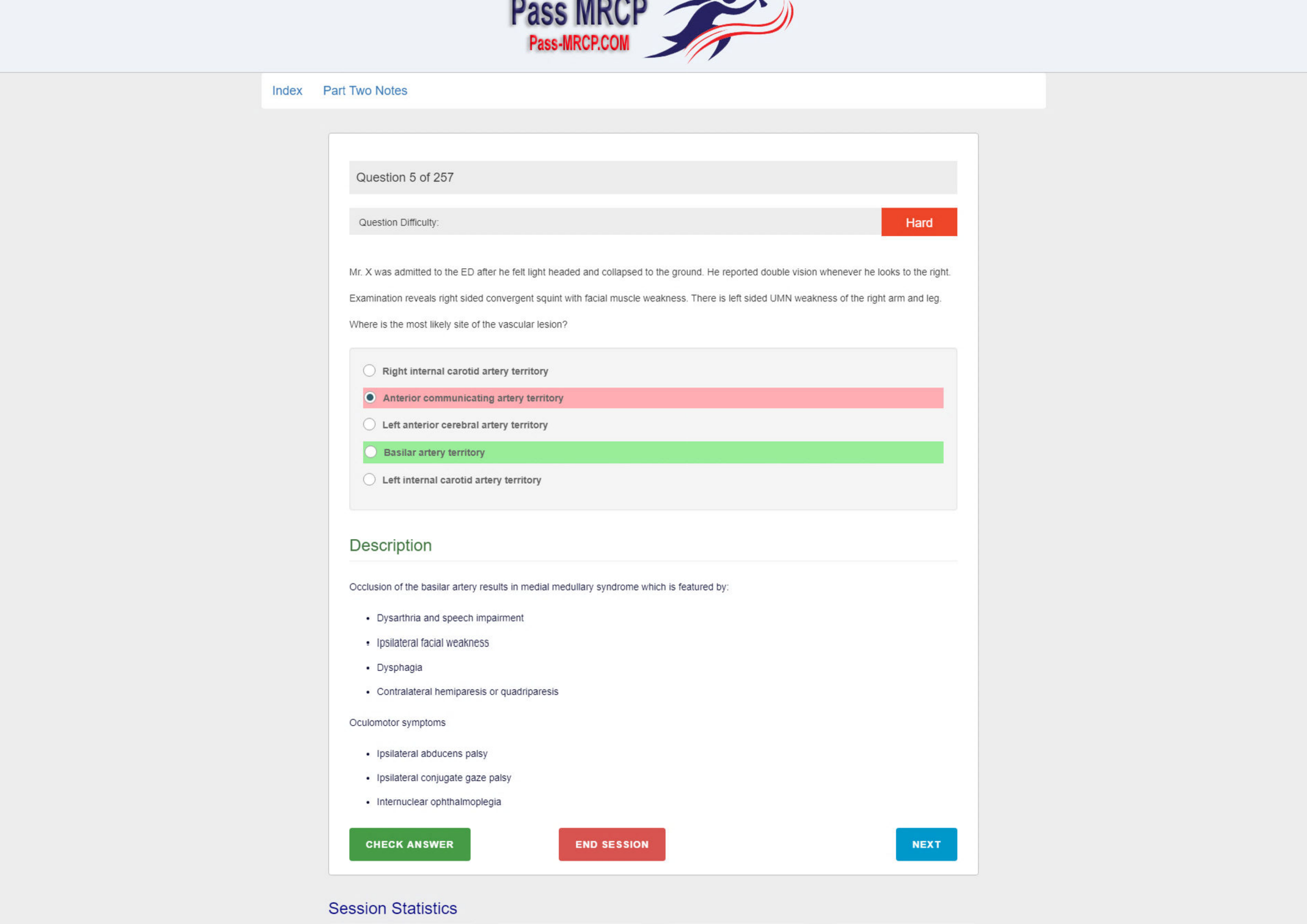
✕ Incorrect: 3
Average Score: 0 %



Question 5 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED after he felt light headed and collapsed to the ground. He reported double vision whenever he looks to the right.

Examination reveals right sided convergent squint with facial muscle weakness. There is left sided UMN weakness of the right arm and leg.

Where is the most likely site of the vascular lesion?

○ **Right internal carotid artery territory**
● **Anterior communicating artery territory**
○ **Left anterior cerebral artery territory**
○ **Basilar artery territory**
○ **Left internal carotid artery territory**

Description

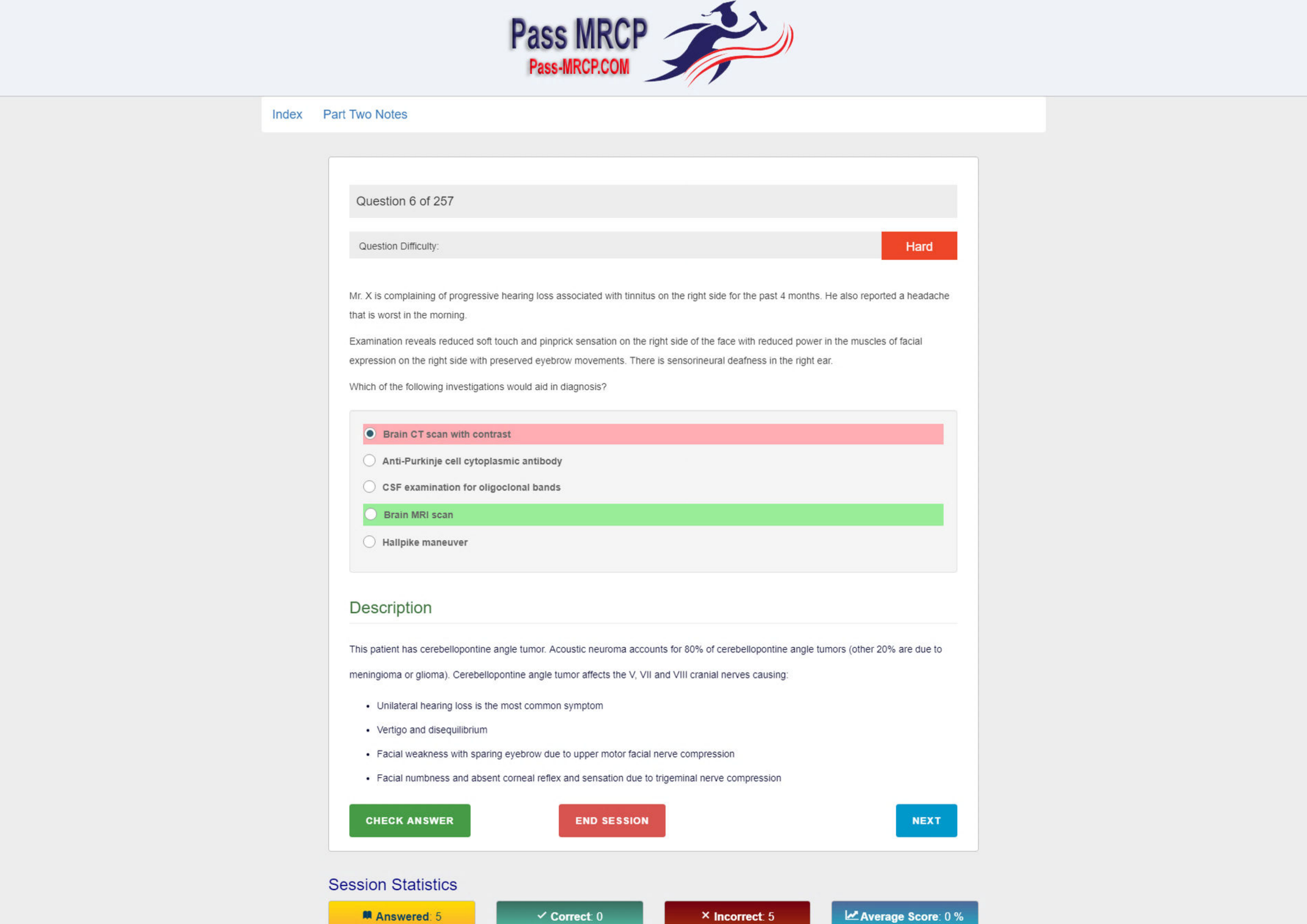
Occlusion of the basilar artery results in medial medullary syndrome which is featured by:

- Dysarthria and speech impairment
- Ipsilateral facial weakness
- Dysphagia
- Contralateral hemiparesis or quadriparesis

Oculomotor symptoms

- Ipsilateral abducens palsy
- Ipsilateral conjugate gaze palsy
- Internuclear ophthalmoplegia

Session Statistics



Question 6 of 257

Question Difficulty: Hard

Mr. X is complaining of progressive hearing loss associated with tinnitus on the right side for the past 4 months. He also reported a headache that is worst in the morning.

Examination reveals reduced soft touch and pinprick sensation on the right side of the face with reduced power in the muscles of facial expression on the right side with preserved eyebrow movements. There is sensorineural deafness in the right ear.

Which of the following investigations would aid in diagnosis?

● **Brain CT scan with contrast**
○ **Anti-Purkinje cell cytoplasmic antibody**
○ **CSF examination for oligoclonal bands**
○ **Brain MRI scan**
○ **Hallpike maneuver**

Description

This patient has cerebellopontine angle tumor. Acoustic neuroma accounts for 80% of cerebellopontine angle tumors (other 20% are due to meningioma or glioma). Cerebellopontine angle tumor affects the V, VII and VIII cranial nerves causing:

- Unilateral hearing loss is the most common symptom
- Vertigo and disequilibrium
- Facial weakness with sparing eyebrow due to upper motor facial nerve compression
- Facial numbness and absent corneal reflex and sensation due to trigeminal nerve compression

Session Statistics

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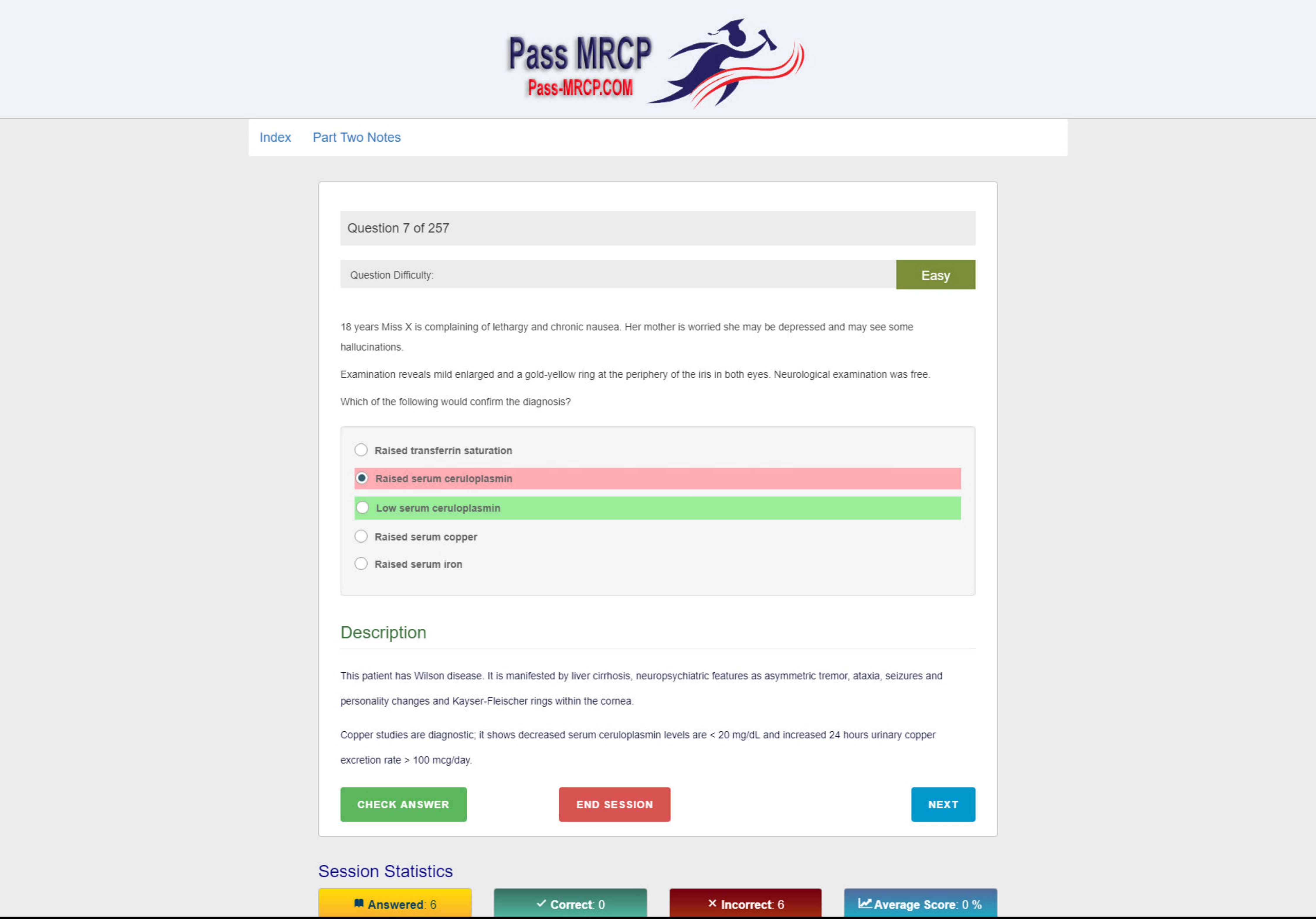
Average Score: 0 %



Question 7 of 257

Question Difficulty: **Easy**

18 years Miss X is complaining of lethargy and chronic nausea. Her mother is worried she may be depressed and may see some hallucinations.

Examination reveals mild enlarged and a gold-yellow ring at the periphery of the iris in both eyes. Neurological examination was free.

Which of the following would confirm the diagnosis?

- ○ **Raised transferrin saturation**
- ● **Raised serum ceruloplasmin**
- ○ **Low serum ceruloplasmin**
- ○ **Raised serum copper**
- ○ **Raised serum iron**

Description

This patient has Wilson disease. It is manifested by liver cirrhosis, neuropsychiatric features as asymmetric tremor, ataxia, seizures and personality changes and Kayser-Fleischer rings within the cornea.

Copper studies are diagnostic; it shows decreased serum ceruloplasmin levels are < 20 mg/dL and increased 24 hours urinary copper excretion rate > 100 mcg/day.

Session Statistics

Answered: 6
✓ **Correct**: 0
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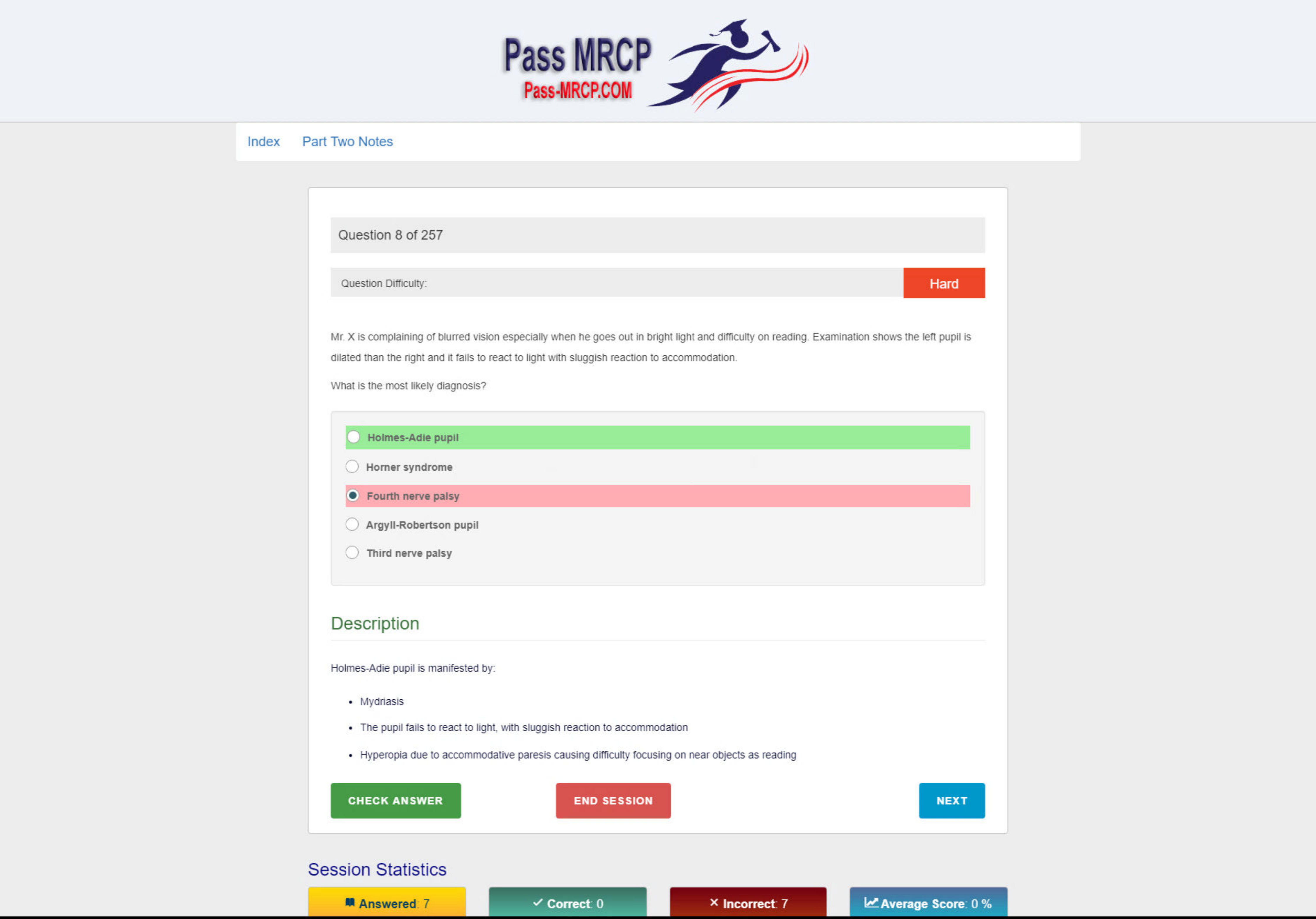

Question 8 of 257

Question Difficulty: Hard

Mr. X is complaining of blurred vision especially when he goes out in bright light and difficulty on reading. Examination shows the left pupil is dilated than the right and it fails to react to light with sluggish reaction to accommodation.

What is the most likely diagnosis?

○ Holmes-Adie pupil
○ Horner syndrome
● Fourth nerve palsy
○ Argyll-Robertson pupil
○ Third nerve palsy

Description

Holmes-Adie pupil is manifested by:

- Mydriasis
- The pupil fails to react to light, with sluggish reaction to accommodation
- Hyperopia due to accommodative paresis causing difficulty focusing on near objects as reading

Session Statistics

Answered: 7
Correct: 0
Incorrect: 7
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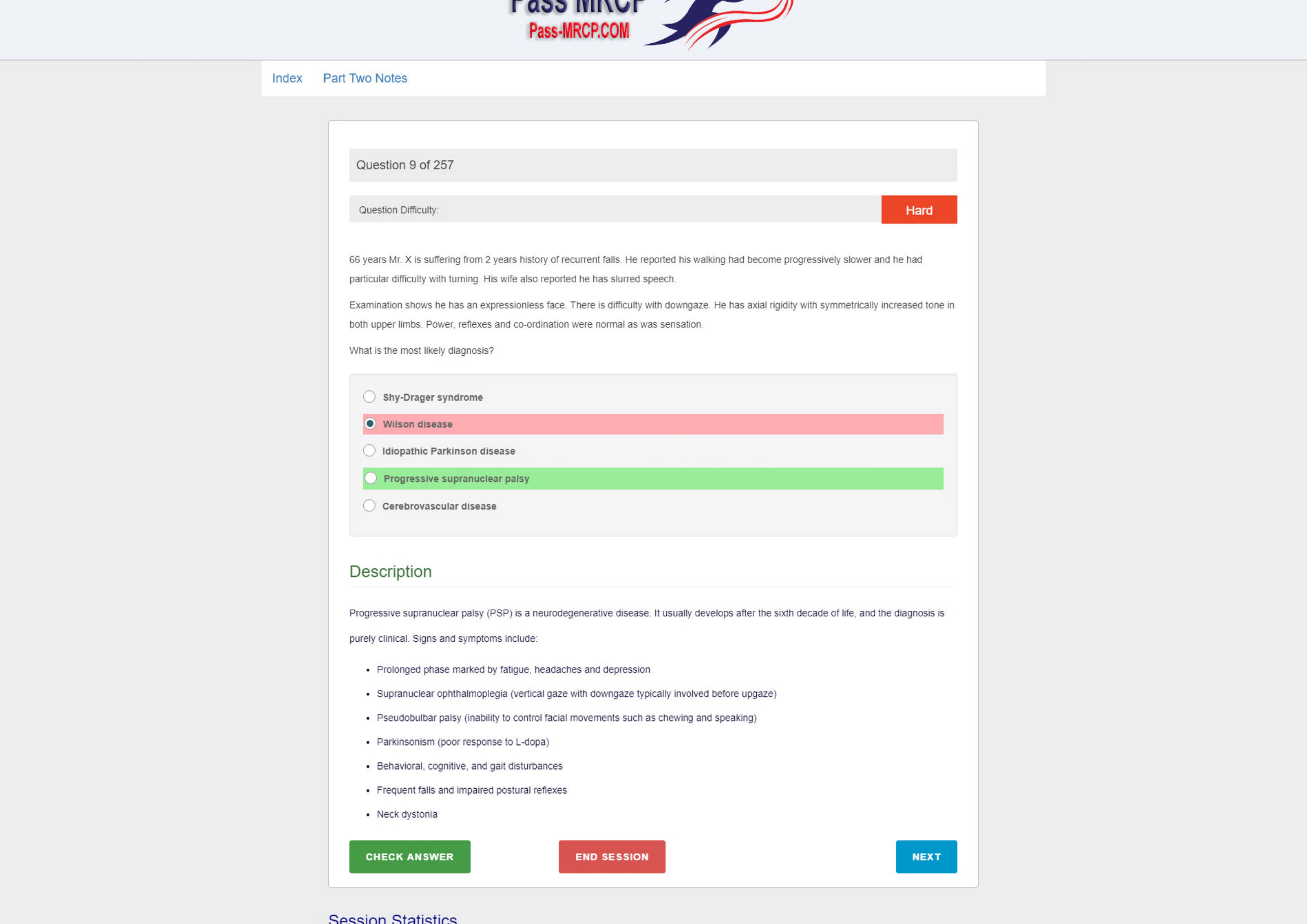


Question 9 of 257

Question Difficulty: Hard

66 years Mr. X is suffering from 2 years history of recurrent falls. He reported his walking had become progressively slower and he had particular difficulty with turning. His wife also reported he has slurred speech.

Examination shows he has an expressionless face. There is difficulty with downgaze. He has axial rigidity with symmetrically increased tone in both upper limbs. Power, reflexes and co-ordination were normal as was sensation.

What is the most likely diagnosis?

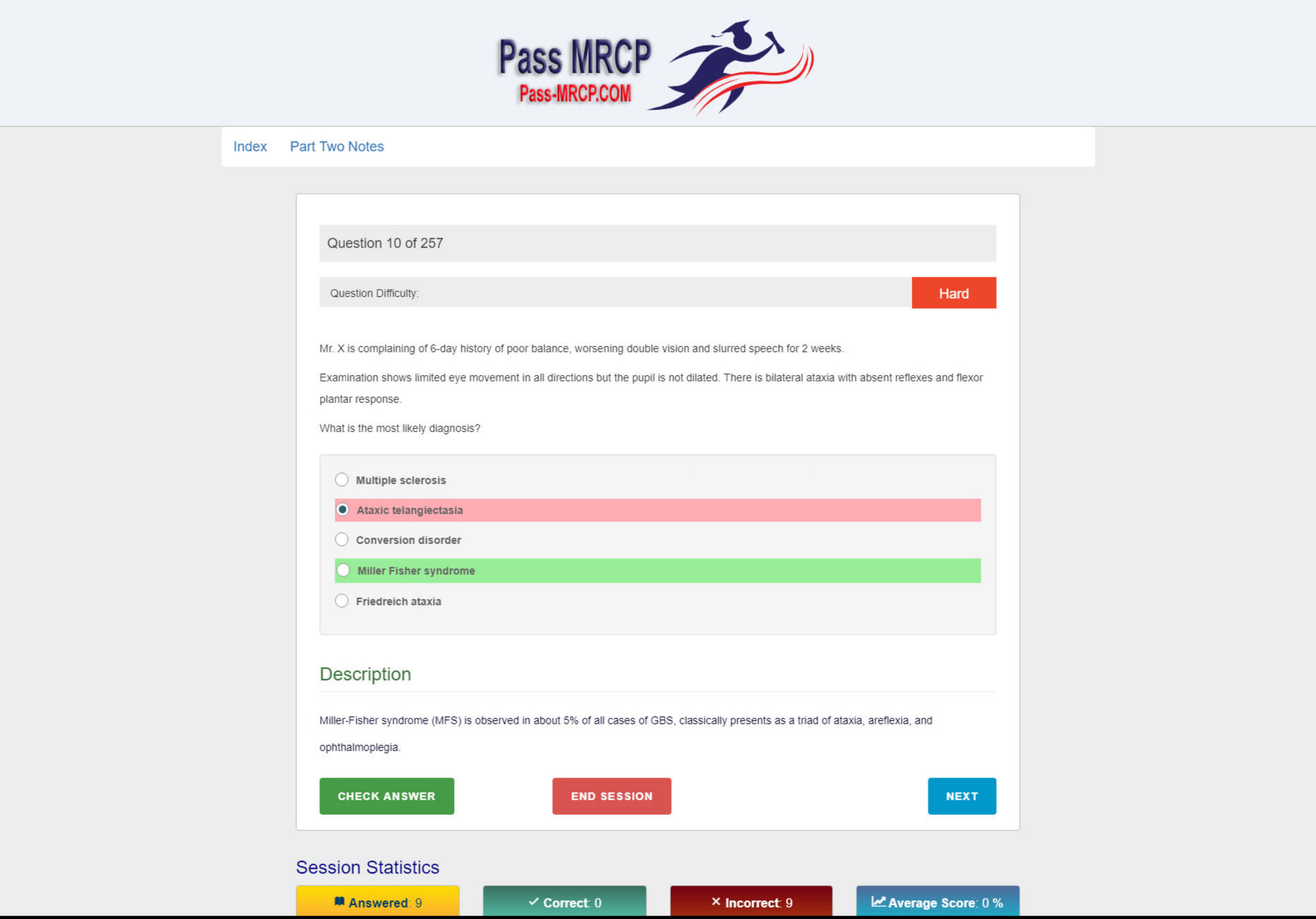
○ **Shy-Drager syndrome**
● **Wilson disease**
○ **Idiopathic Parkinson disease**
○ **Progressive supranuclear palsy**
○ **Cerebrovascular disease**

Description

Progressive supranuclear palsy (PSP) is a neurodegenerative disease. It usually develops after the sixth decade of life, and the diagnosis is purely clinical. Signs and symptoms include:

- Prolonged phase marked by fatigue, headaches and depression
- Supranuclear ophthalmoplegia (vertical gaze with downgaze typically involved before upgaze)
- Pseudobulbar palsy (inability to control facial movements such as chewing and speaking)
- Parkinsonism (poor response to L-dopa)
- Behavioral, cognitive, and gait disturbances
- Frequent falls and impaired postural reflexes
- Neck dystonia

Session Statistics



Question 10 of 257

Question Difficulty: Hard

Mr. X is complaining of 6-day history of poor balance, worsening double vision and slurred speech for 2 weeks.

Examination shows limited eye movement in all directions but the pupil is not dilated. There is bilateral ataxia with absent reflexes and flexor plantar response.

What is the most likely diagnosis?

- ○ Multiple sclerosis
- ● Ataxic telangiectasia
- ○ Conversion disorder
- ○ Miller Fisher syndrome
- ○ Friedreich ataxia

Description

Miller-Fisher syndrome (MFS) is observed in about 5% of all cases of GBS, classically presents as a triad of ataxia, areflexia, and ophthalmoplegia.

Session Statistics

Answered: 9

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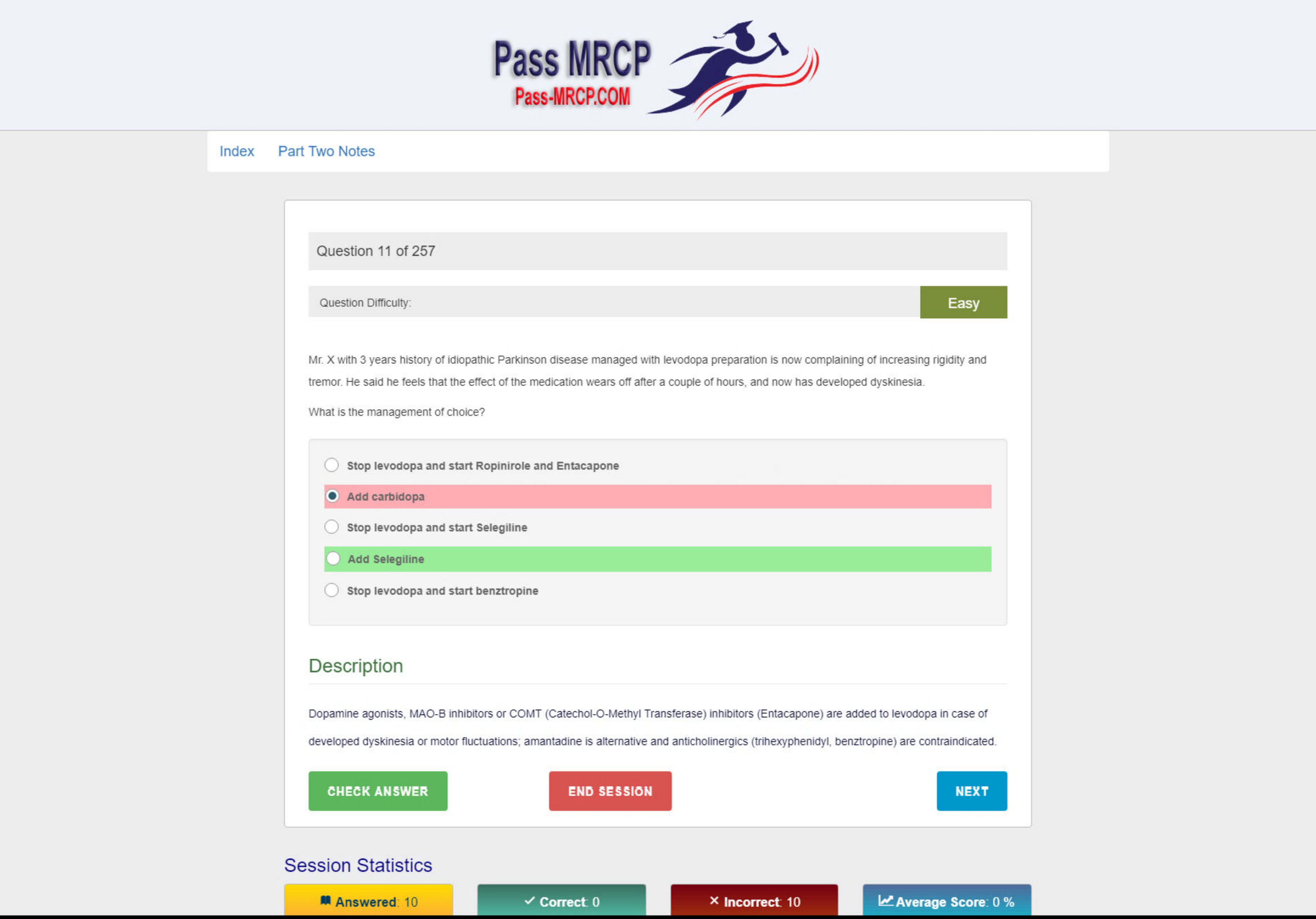
✕ Incorrect: 9

Average Score: 0 %



Question 11 of 257

Question Difficulty: **Easy**

Mr. X with 3 years history of idiopathic Parkinson disease managed with levodopa preparation is now complaining of increasing rigidity and tremor. He said he feels that the effect of the medication wears off after a couple of hours, and now has developed dyskinesia.

What is the management of choice?

- ○ **Stop levodopa and start Ropinirole and Entacapone**
- ● **Add carbidopa**
- ○ **Stop levodopa and start Selegiline**
- ○ **Add Selegiline**
- ○ **Stop levodopa and start benztropine**

Description

Dopamine agonists, MAO-B inhibitors or COMT (Catechol-O-Methyl Transferase) inhibitors (Entacapone) are added to levodopa in case of developed dyskinesia or motor fluctuations; amantadine is alternative and anticholinergics (trihexyphenidyl, benztropine) are contraindicated.

Session Statistics

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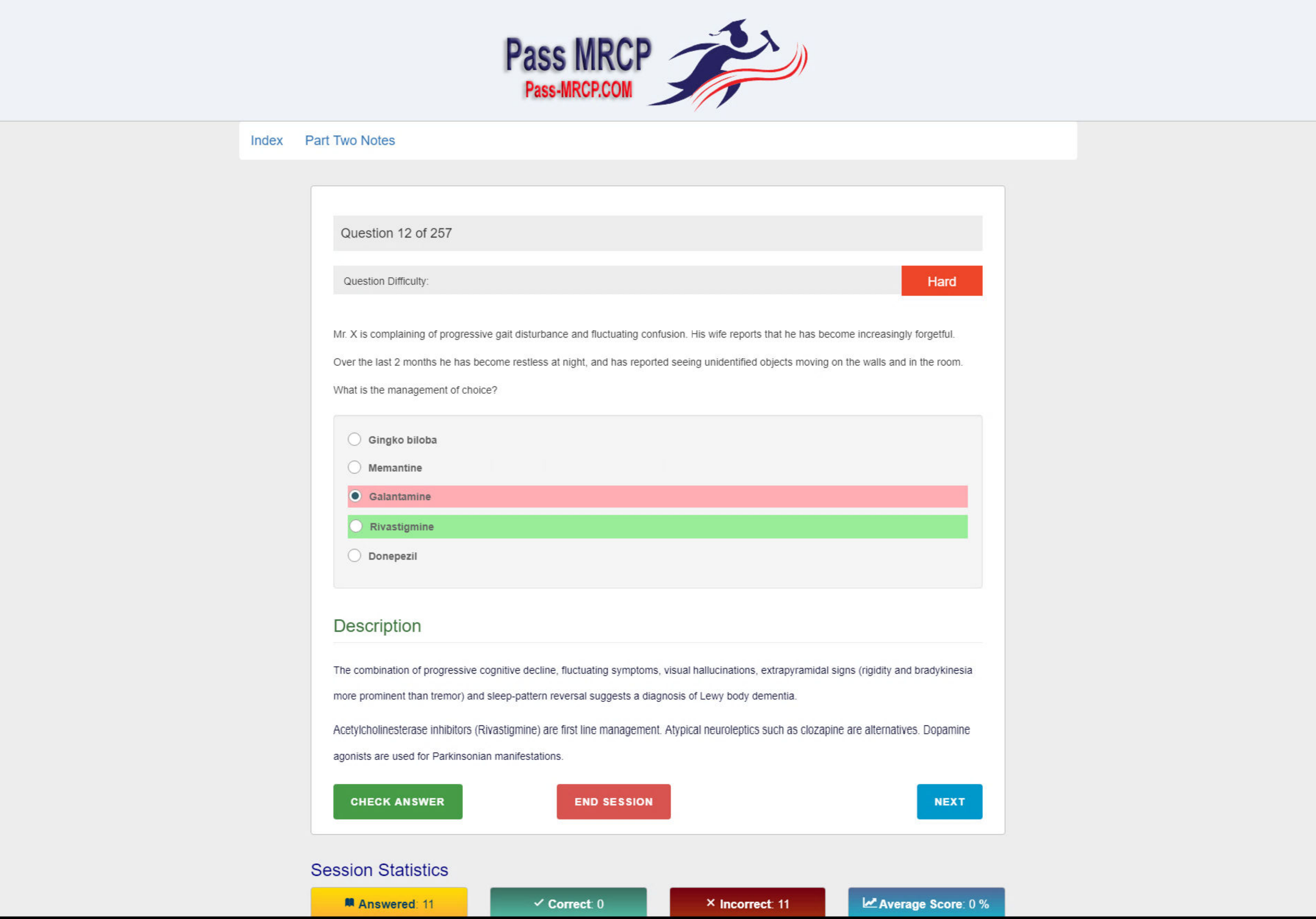
Average Score: 0 %



Question 12 of 257

Question Difficulty: **Hard**

Mr. X is complaining of progressive gait disturbance and fluctuating confusion. His wife reports that he has become increasingly forgetful.

Over the last 2 months he has become restless at night, and has reported seeing unidentified objects moving on the walls and in the room.

What is the management of choice?

- ○ **Gingko biloba**
- ○ **Memantine**
- ● **Galantamine**
- ○ **Rivastigmine**
- ○ **Donepezil**

Description

The combination of progressive cognitive decline, fluctuating symptoms, visual hallucinations, extrapyramidal signs (rigidity and bradykinesia more prominent than tremor) and sleep-pattern reversal suggests a diagnosis of Lewy body dementia.

Acetylcholinesterase inhibitors (Rivastigmine) are first line management. Atypical neuroleptics such as clozapine are alternatives. Dopamine agonists are used for Parkinsonian manifestations.

Session Statistics

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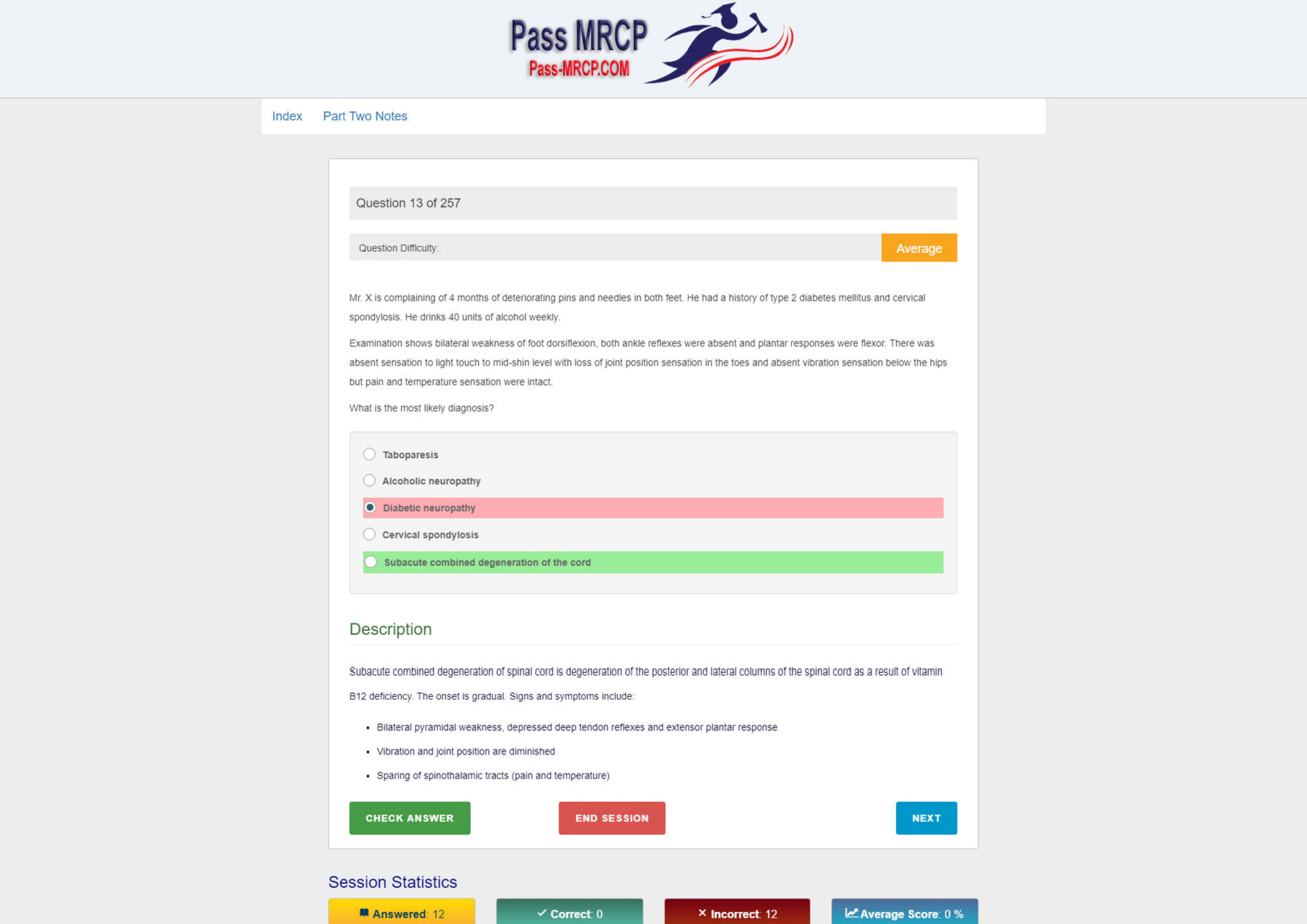

Question 13 of 257

Question Difficulty: **Average**

Mr. X is complaining of 4 months of deteriorating pins and needles in both feet. He had a history of type 2 diabetes mellitus and cervical spondylosis. He drinks 40 units of alcohol weekly.

Examination shows bilateral weakness of foot dorsiflexion, both ankle reflexes were absent and plantar responses were flexor. There was absent sensation to light touch to mid-shin level with loss of joint position sensation in the toes and absent vibration sensation below the hips but pain and temperature sensation were intact.

What is the most likely diagnosis?

○ **Taboparesis**

○ **Alcoholic neuropathy**

● **Diabetic neuropathy**

○ **Cervical spondylosis**

○ **Subacute combined degeneration of the cord**

Description

Subacute combined degeneration of spinal cord is degeneration of the posterior and lateral columns of the spinal cord as a result of vitamin B12 deficiency. The onset is gradual. Signs and symptoms include:

- Bilateral pyramidal weakness, depressed deep tendon reflexes and extensor plantar response
- Vibration and joint position are diminished
- Sparing of spinothalamic tracts (pain and temperature)

Session Statistics

Answered: 12

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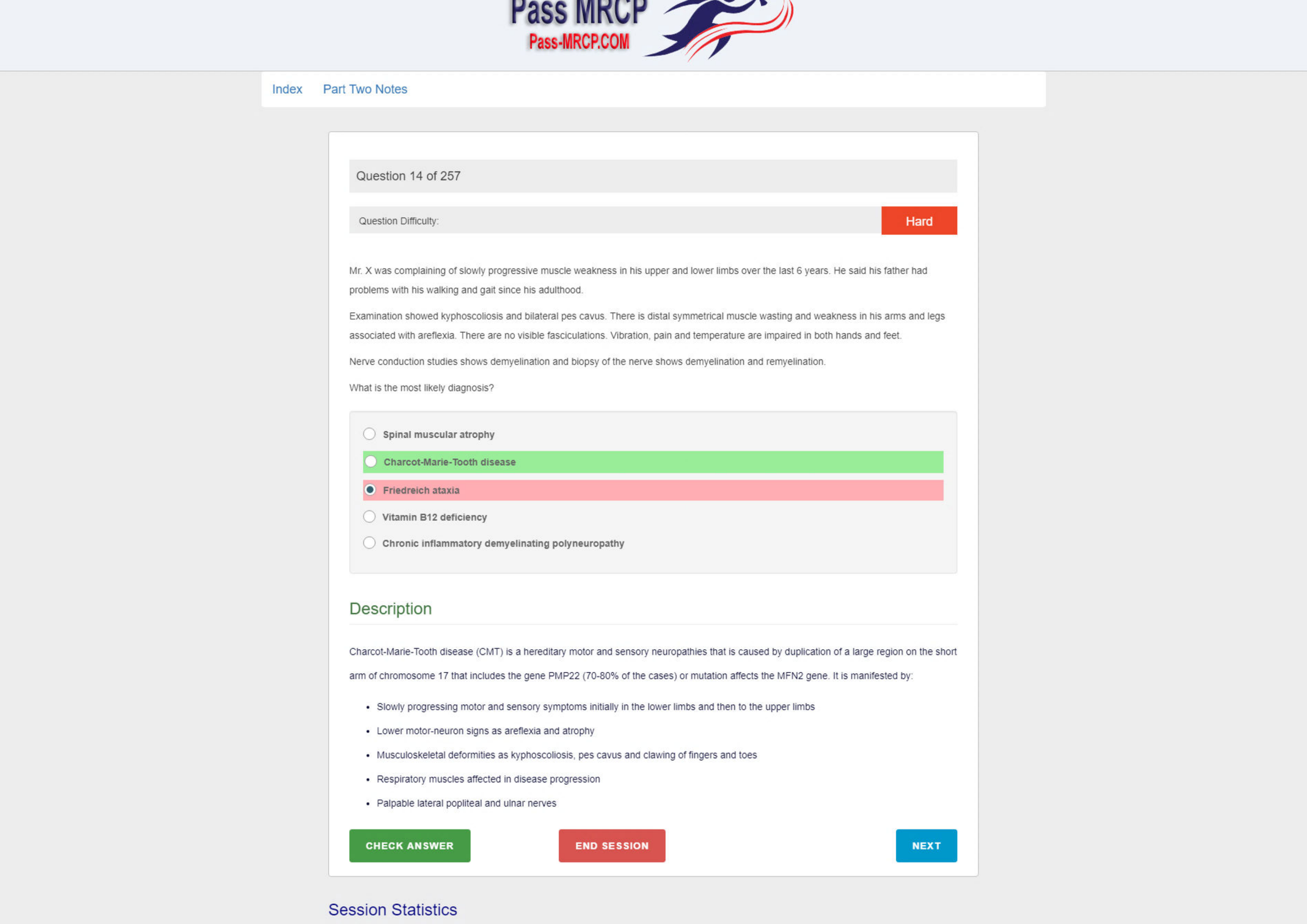
Average Score: 0 %



Question 14 of 257

Question Difficulty: Hard

Mr. X was complaining of slowly progressive muscle weakness in his upper and lower limbs over the last 6 years. He said his father had problems with his walking and gait since his adulthood.

Examination showed kyphoscoliosis and bilateral pes cavus. There is distal symmetrical muscle wasting and weakness in his arms and legs associated with areflexia. There are no visible fasciculations. Vibration, pain and temperature are impaired in both hands and feet.

Nerve conduction studies shows demyelination and biopsy of the nerve shows demyelination and remyelination.

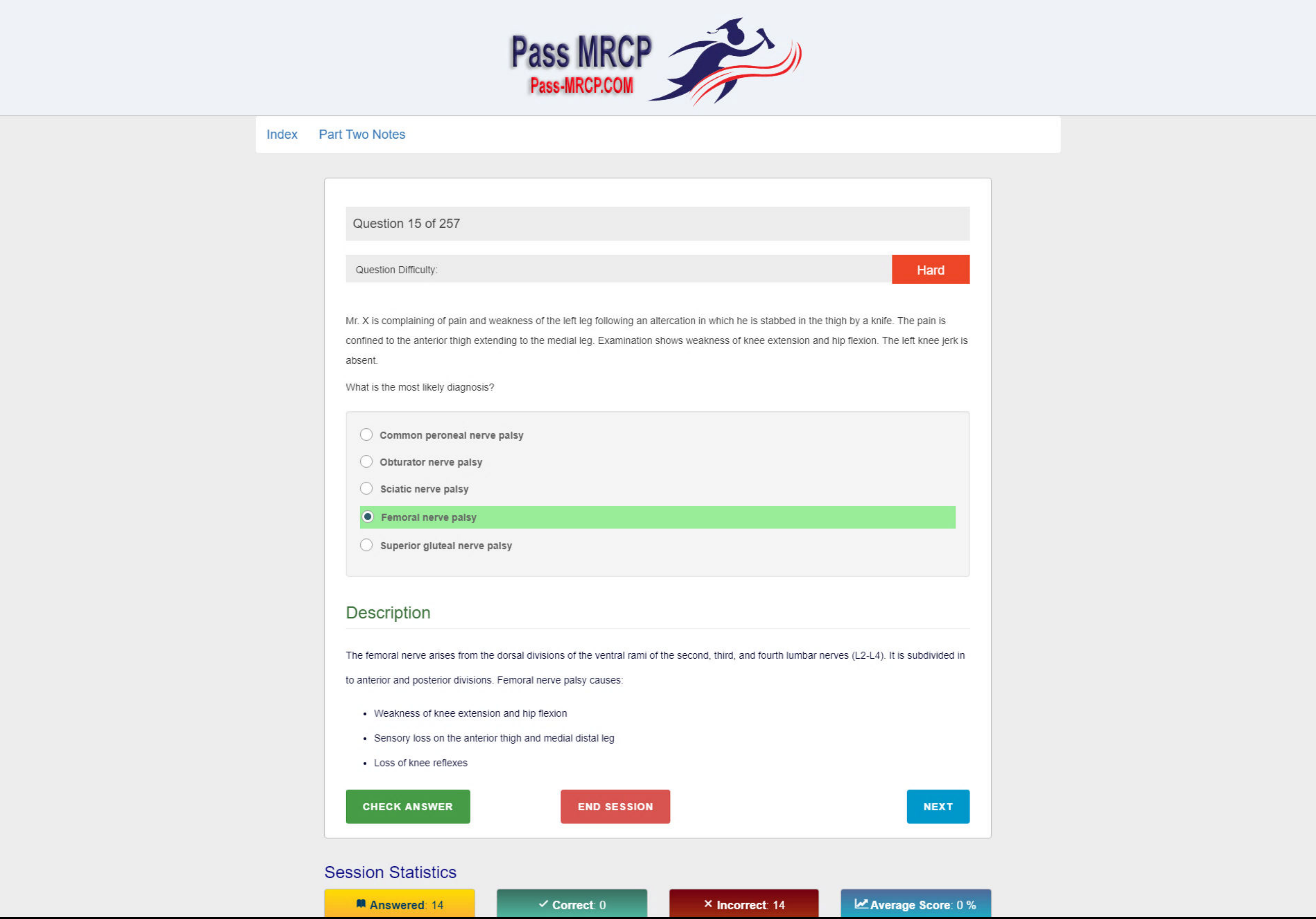
What is the most likely diagnosis?

○ **Spinal muscular atrophy**
○ **Charcot-Marie-Tooth disease**
● **Friedreich ataxia**
○ **Vitamin B12 deficiency**
○ **Chronic inflammatory demyelinating polyneuropathy**

Description

Charcot-Marie-Tooth disease (CMT) is a hereditary motor and sensory neuropathies that is caused by duplication of a large region on the short arm of chromosome 17 that includes the gene PMP22 (70-80% of the cases) or mutation affects the MFN2 gene. It is manifested by:

- Slowly progressing motor and sensory symptoms initially in the lower limbs and then to the upper limbs
- Lower motor-neuron signs as areflexia and atrophy
- Musculoskeletal deformities as kyphoscoliosis, pes cavus and clawing of fingers and toes
- Respiratory muscles affected in disease progression
- Palpable lateral popliteal and ulnar nerves



Question 15 of 257

Question Difficulty: **Hard**

Mr. X is complaining of pain and weakness of the left leg following an altercation in which he is stabbed in the thigh by a knife. The pain is confined to the anterior thigh extending to the medial leg. Examination shows weakness of knee extension and hip flexion. The left knee jerk is absent.

What is the most likely diagnosis?

○ **Common peroneal nerve palsy**
○ **Obturator nerve palsy**
○ **Sciatic nerve palsy**
● **Femoral nerve palsy**
○ **Superior gluteal nerve palsy**

Description

The femoral nerve arises from the dorsal divisions of the ventral rami of the second, third, and fourth lumbar nerves (L2-L4). It is subdivided in to anterior and posterior divisions. Femoral nerve palsy causes:

- Weakness of knee extension and hip flexion
- Sensory loss on the anterior thigh and medial distal leg
- Loss of knee reflexes

Session Statistics

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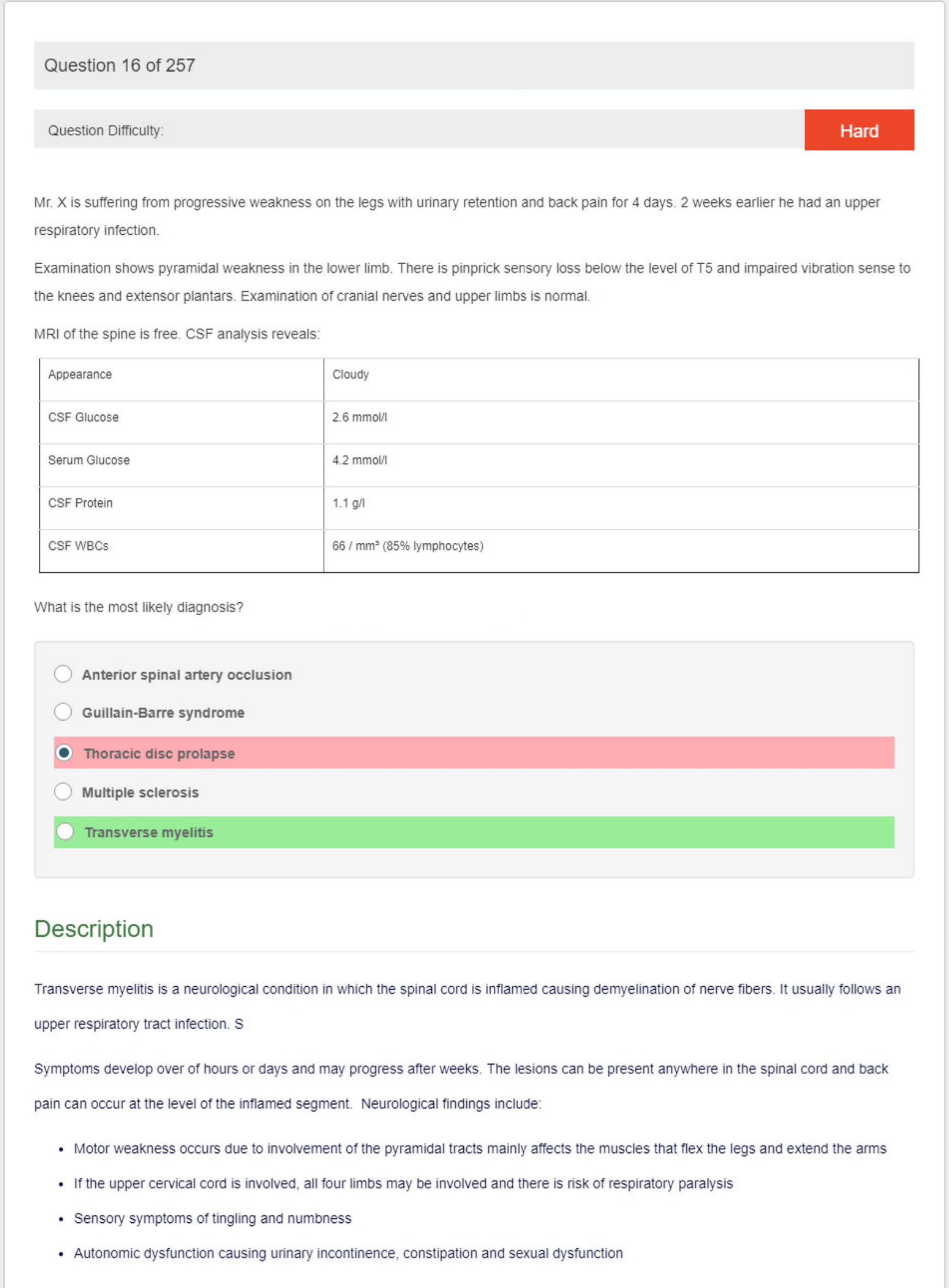
Average Score: 0 %



Question 16 of 257

Question Difficulty: **Hard**

Mr. X is suffering from progressive weakness on the legs with urinary retention and back pain for 4 days. 2 weeks earlier he had an upper respiratory infection.

Examination shows pyramidal weakness in the lower limb. There is pinprick sensory loss below the level of T5 and impaired vibration sense to the knees and extensor plantars. Examination of cranial nerves and upper limbs is normal.

MRI of the spine is free. CSF analysis reveals:

Appearance	Cloudy
CSF Glucose	2.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	1.1 g/l
CSF WBCs	66 / mm³ (85% lymphocytes)

What is the most likely diagnosis?

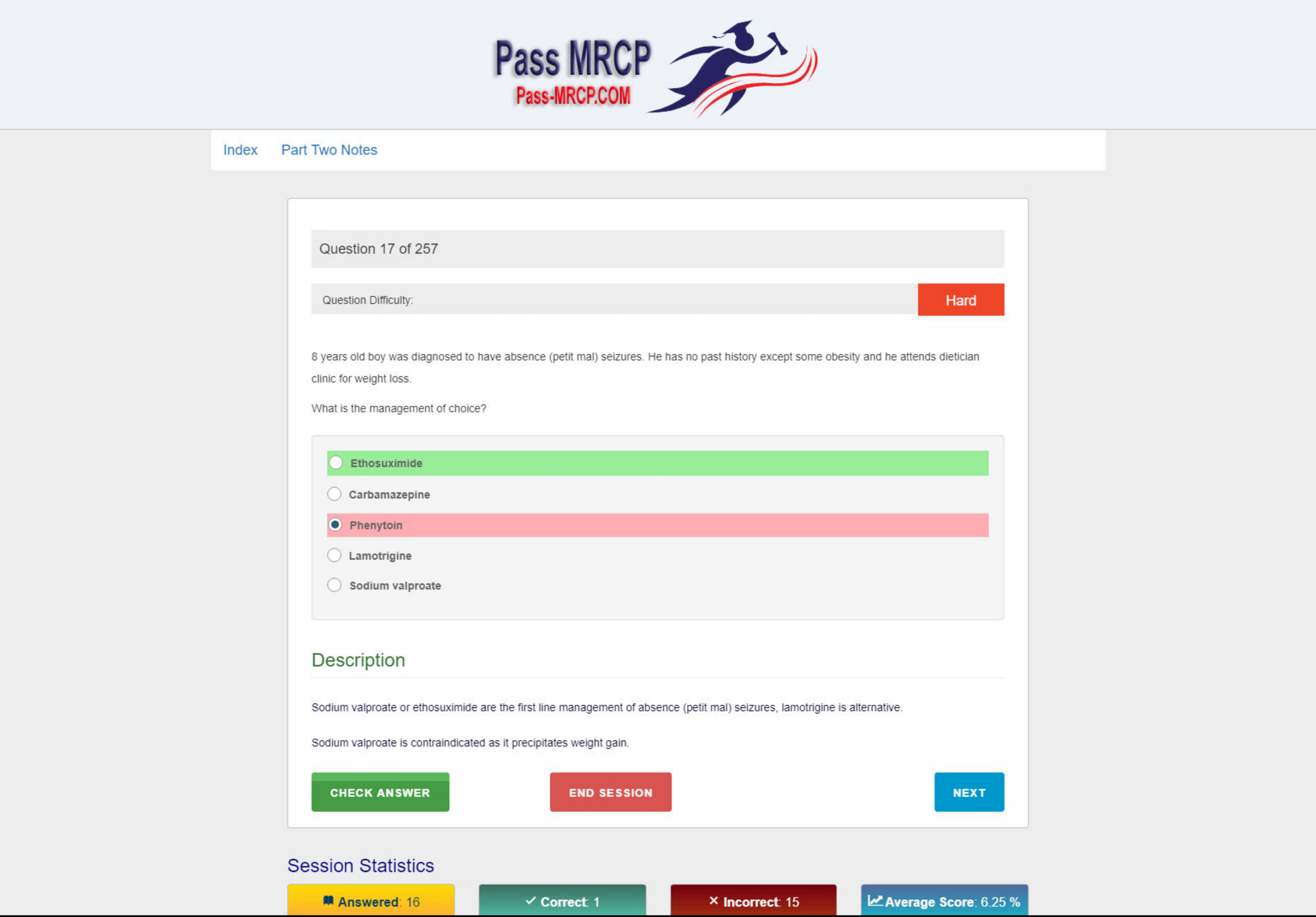
○ **Anterior spinal artery occlusion**
○ **Guillain-Barre syndrome**
● **Thoracic disc prolapse** 🟥
○ **Multiple sclerosis**
○ **Transverse myelitis** 🟩

Description

Transverse myelitis is a neurological condition in which the spinal cord is inflamed causing demyelination of nerve fibers. It usually follows an upper respiratory tract infection. S

Symptoms develop over of hours or days and may progress after weeks. The lesions can be present anywhere in the spinal cord and back pain can occur at the level of the inflamed segment. Neurological findings include:

- Motor weakness occurs due to involvement of the pyramidal tracts mainly affects the muscles that flex the legs and extend the arms
- If the upper cervical cord is involved, all four limbs may be involved and there is risk of respiratory paralysis
- Sensory symptoms of tingling and numbness
- Autonomic dysfunction causing urinary incontinence, constipation and sexual dysfunction



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Part Two Notes

Question 17 of 257

Question Difficulty: Hard

8 years old boy was diagnosed to have absence (petit mal) seizures. He has no past history except some obesity and he attends dietician clinic for weight loss.

What is the management of choice?

○ Ethosuximide
○ Carbamazepine
● Phenytoin
○ Lamotrigine
○ Sodium valproate

Description

Sodium valproate or ethosuximide are the first line management of absence (petit mal) seizures, lamotrigine is alternative.

Sodium valproate is contraindicated as it precipitates weight gain.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

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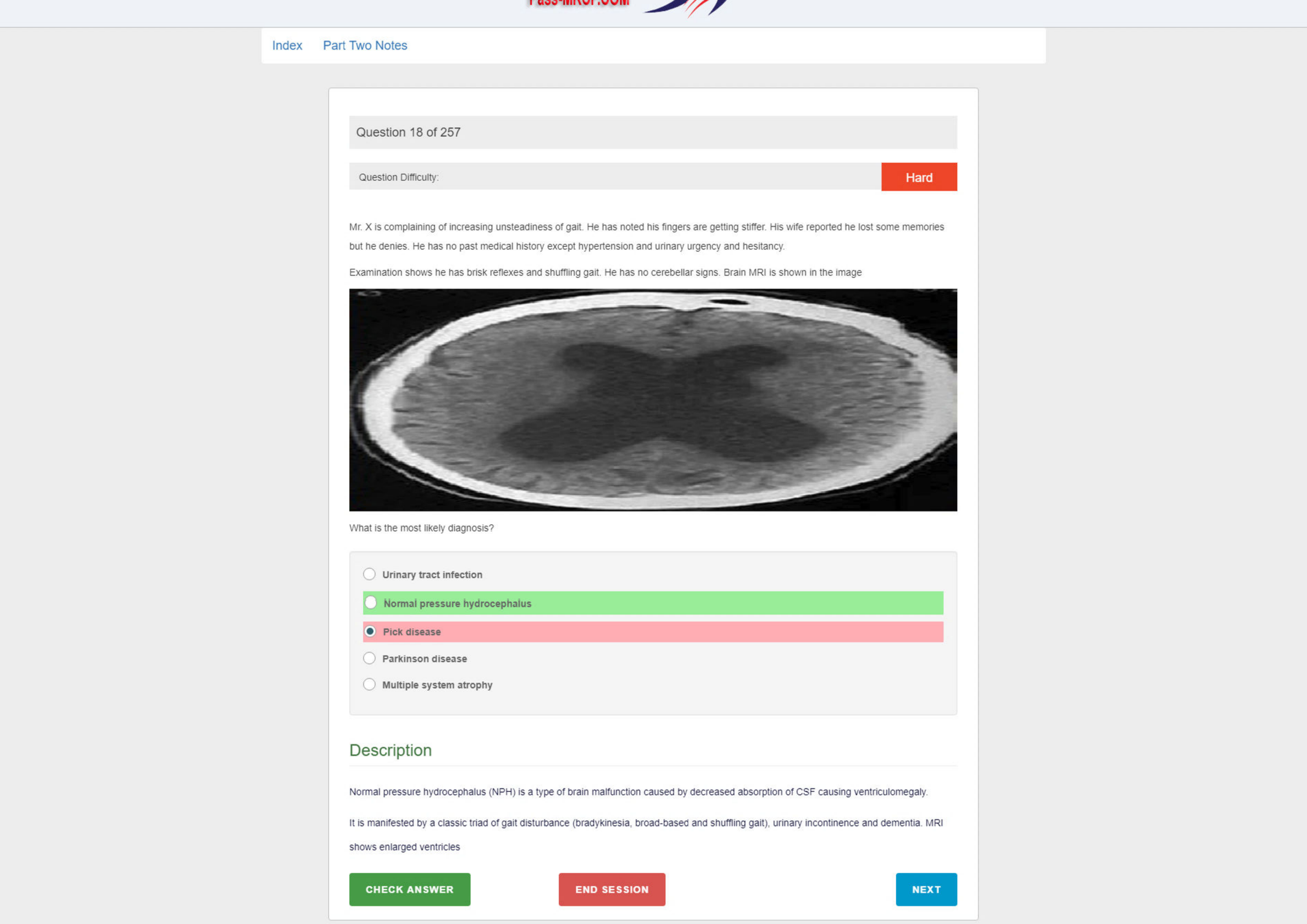


Question 18 of 257

Question Difficulty: **Hard**

Mr. X is complaining of increasing unsteadiness of gait. He has noted his fingers are getting stiffer. His wife reported he lost some memories but he denies. He has no past medical history except hypertension and urinary urgency and hesitancy.

Examination shows he has brisk reflexes and shuffling gait. He has no cerebellar signs. Brain MRI is shown in the image

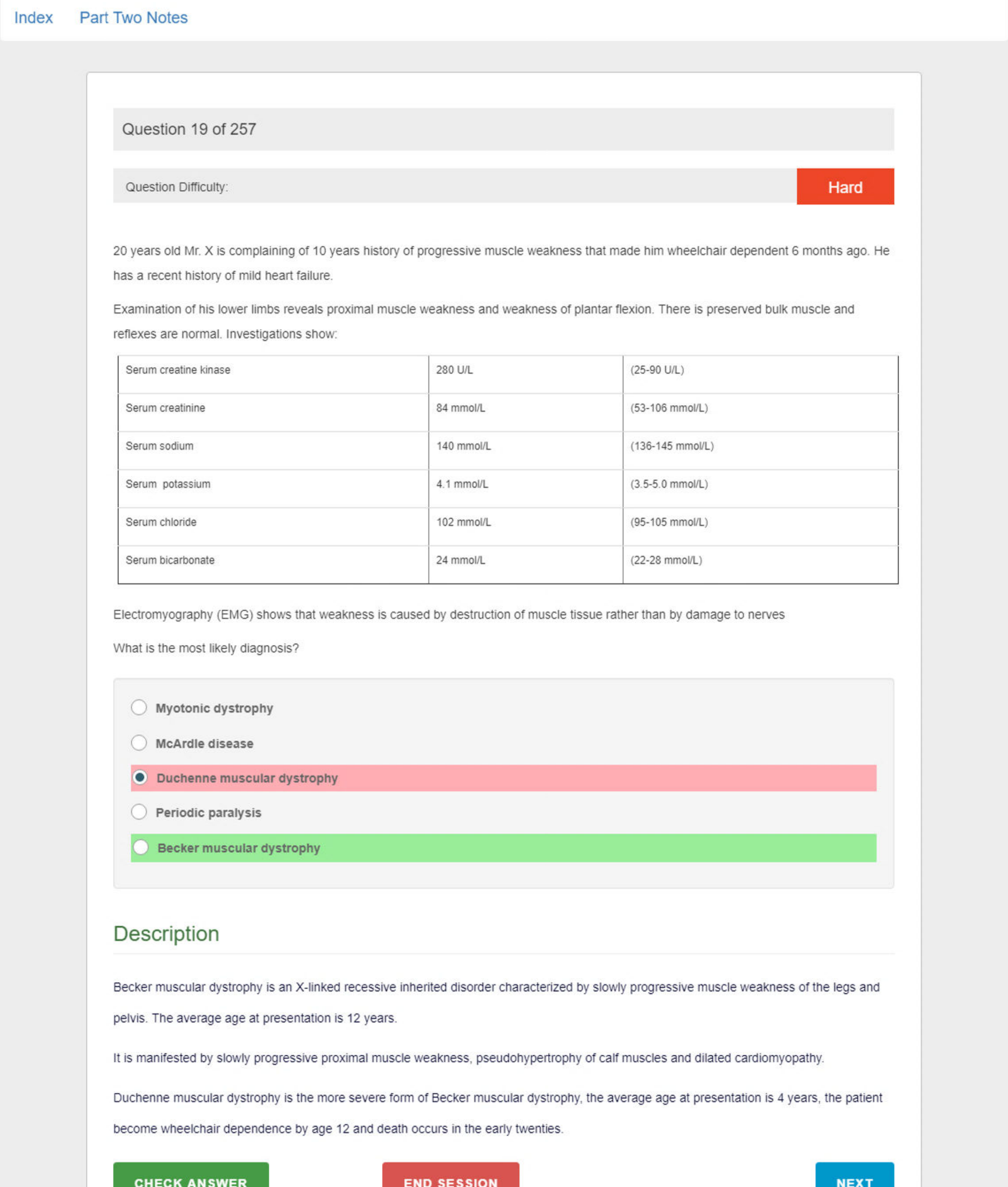
What is the most likely diagnosis?

- ○ **Urinary tract infection**
- ○ **Normal pressure hydrocephalus**
- ● **Pick disease**
- ○ **Parkinson disease**
- ○ **Multiple system atrophy**

Description

Normal pressure hydrocephalus (NPH) is a type of brain malfunction caused by decreased absorption of CSF causing ventriculomegaly.

It is manifested by a classic triad of gait disturbance (bradykinesia, broad-based and shuffling gait), urinary incontinence and dementia. MRI shows enlarged ventricles



Question 19 of 257

Question Difficulty: Hard

20 years old Mr. X is complaining of 10 years history of progressive muscle weakness that made him wheelchair dependent 6 months ago. He has a recent history of mild heart failure.

Examination of his lower limbs reveals proximal muscle weakness and weakness of plantar flexion. There is preserved bulk muscle and reflexes are normal. Investigations show:

Serum creatine kinase	280 U/L	(25-90 U/L)
Serum creatinine	84 mmol/L	(53-106 mmol/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.1 mmol/L	(3.5-5.0 mmol/L)
Serum chloride	102 mmol/L	(95-105 mmol/L)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

Electromyography (EMG) shows that weakness is caused by destruction of muscle tissue rather than by damage to nerves

What is the most likely diagnosis?

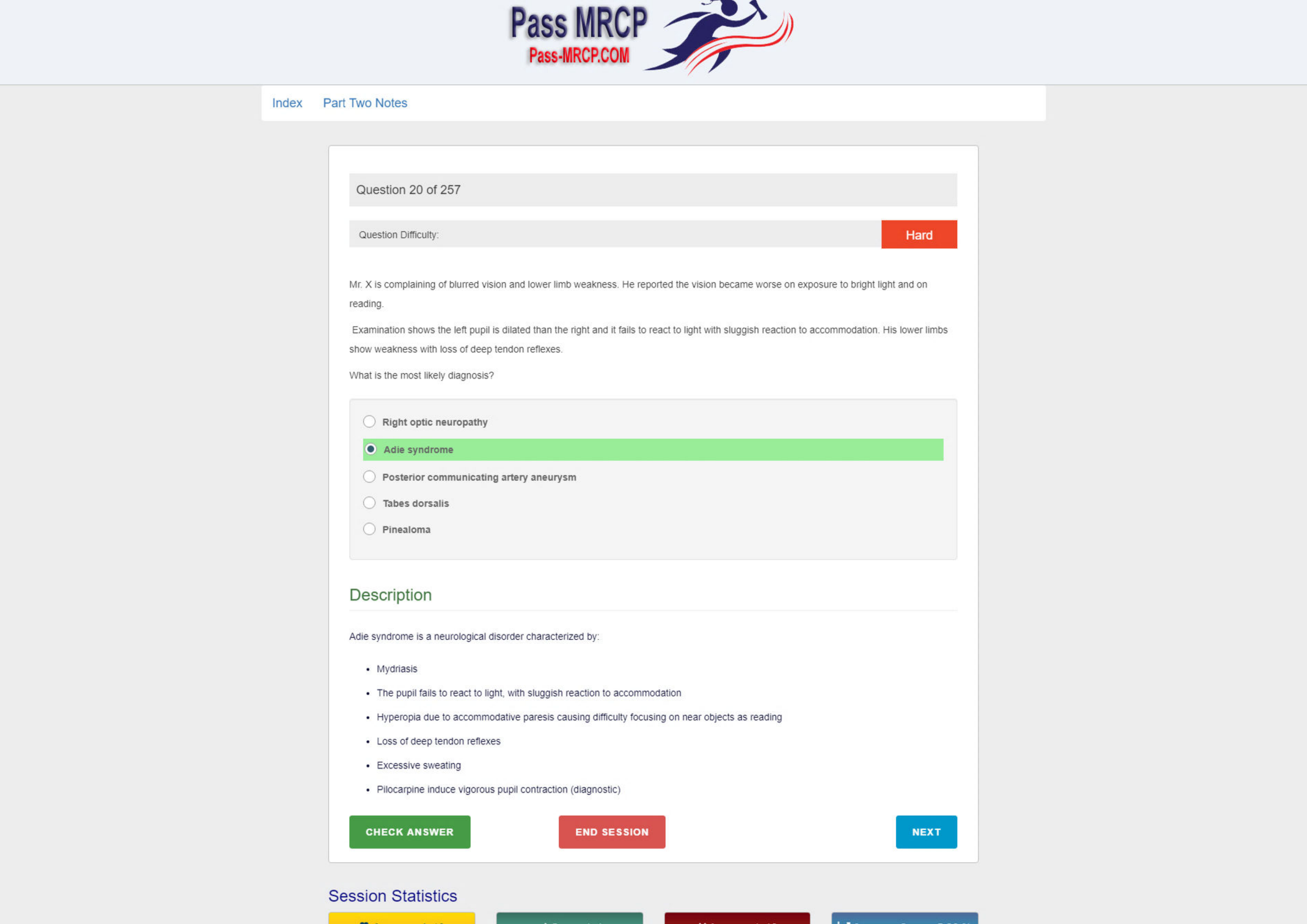
- ○ **Myotonic dystrophy**
- ○ **McArdle disease**
- ● **Duchenne muscular dystrophy**
- ○ **Periodic paralysis**
- ○ **Becker muscular dystrophy**

Description

Becker muscular dystrophy is an X-linked recessive inherited disorder characterized by slowly progressive muscle weakness of the legs and pelvis. The average age at presentation is 12 years.

It is manifested by slowly progressive proximal muscle weakness, pseudohypertrophy of calf muscles and dilated cardiomyopathy.

Duchenne muscular dystrophy is the more severe form of Becker muscular dystrophy, the average age at presentation is 4 years, the patient become wheelchair dependence by age 12 and death occurs in the early twenties.



Question 20 of 257

Question Difficulty: **Hard**

Mr. X is complaining of blurred vision and lower limb weakness. He reported the vision became worse on exposure to bright light and on reading.

Examination shows the left pupil is dilated than the right and it fails to react to light with sluggish reaction to accommodation. His lower limbs show weakness with loss of deep tendon reflexes.

What is the most likely diagnosis?

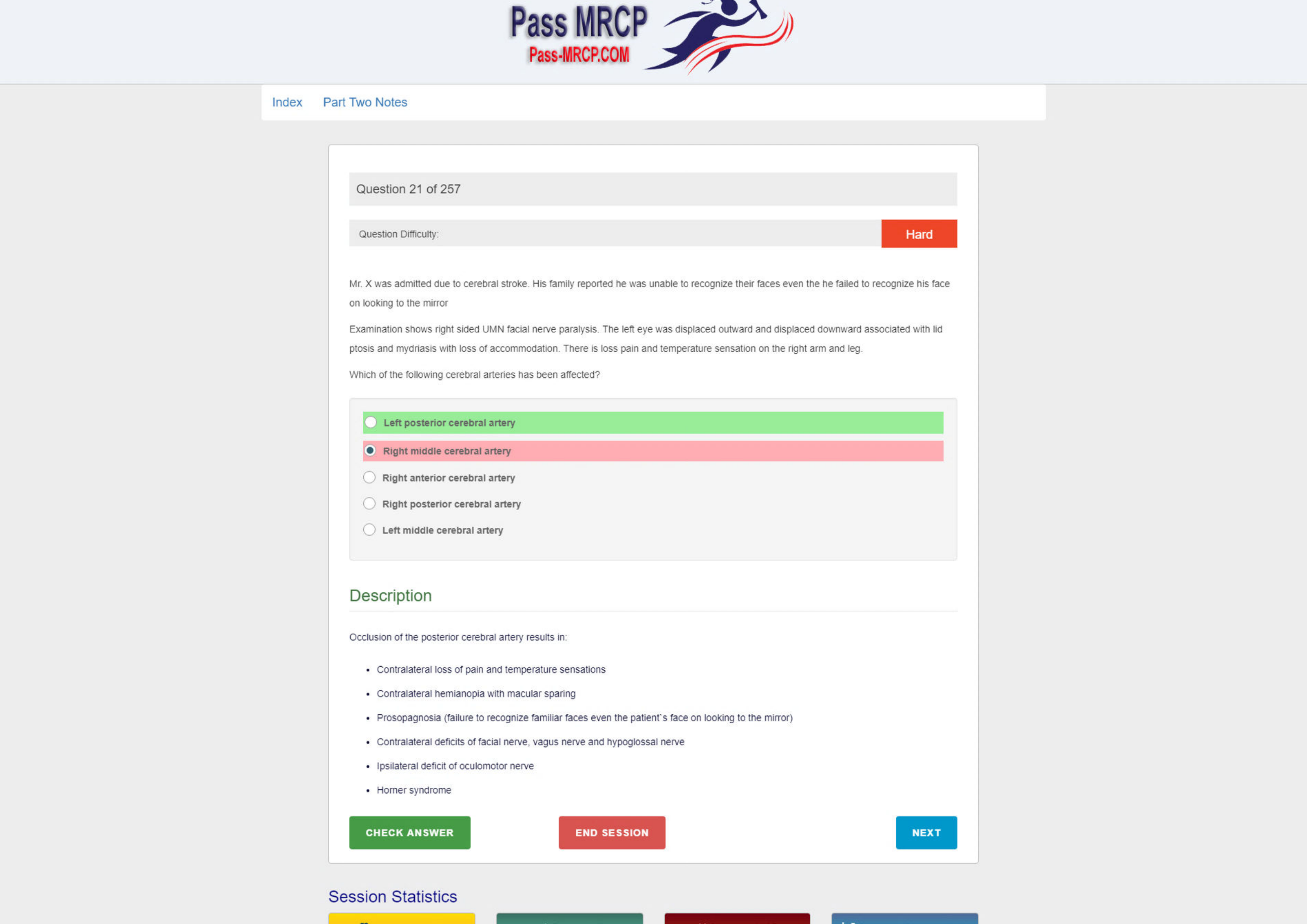
○ **Right optic neuropathy**
● **Adie syndrome**
○ **Posterior communicating artery aneurysm**
○ **Tabes dorsalis**
○ **Pinealoma**

Description

Adie syndrome is a neurological disorder characterized by:

- Mydriasis
- The pupil fails to react to light, with sluggish reaction to accommodation
- Hyperopia due to accommodative paresis causing difficulty focusing on near objects as reading
- Loss of deep tendon reflexes
- Excessive sweating
- Pilocarpine induce vigorous pupil contraction (diagnostic)

Session Statistics



Question 21 of 257

Question Difficulty: Hard

Mr. X was admitted due to cerebral stroke. His family reported he was unable to recognize their faces even the he failed to recognize his face on looking to the mirror

Examination shows right sided UMN facial nerve paralysis. The left eye was displaced outward and displaced downward associated with lid ptosis and mydriasis with loss of accommodation. There is loss pain and temperature sensation on the right arm and leg.

Which of the following cerebral arteries has been affected?

○ Left posterior cerebral artery

● Right middle cerebral artery

○ Right anterior cerebral artery

○ Right posterior cerebral artery

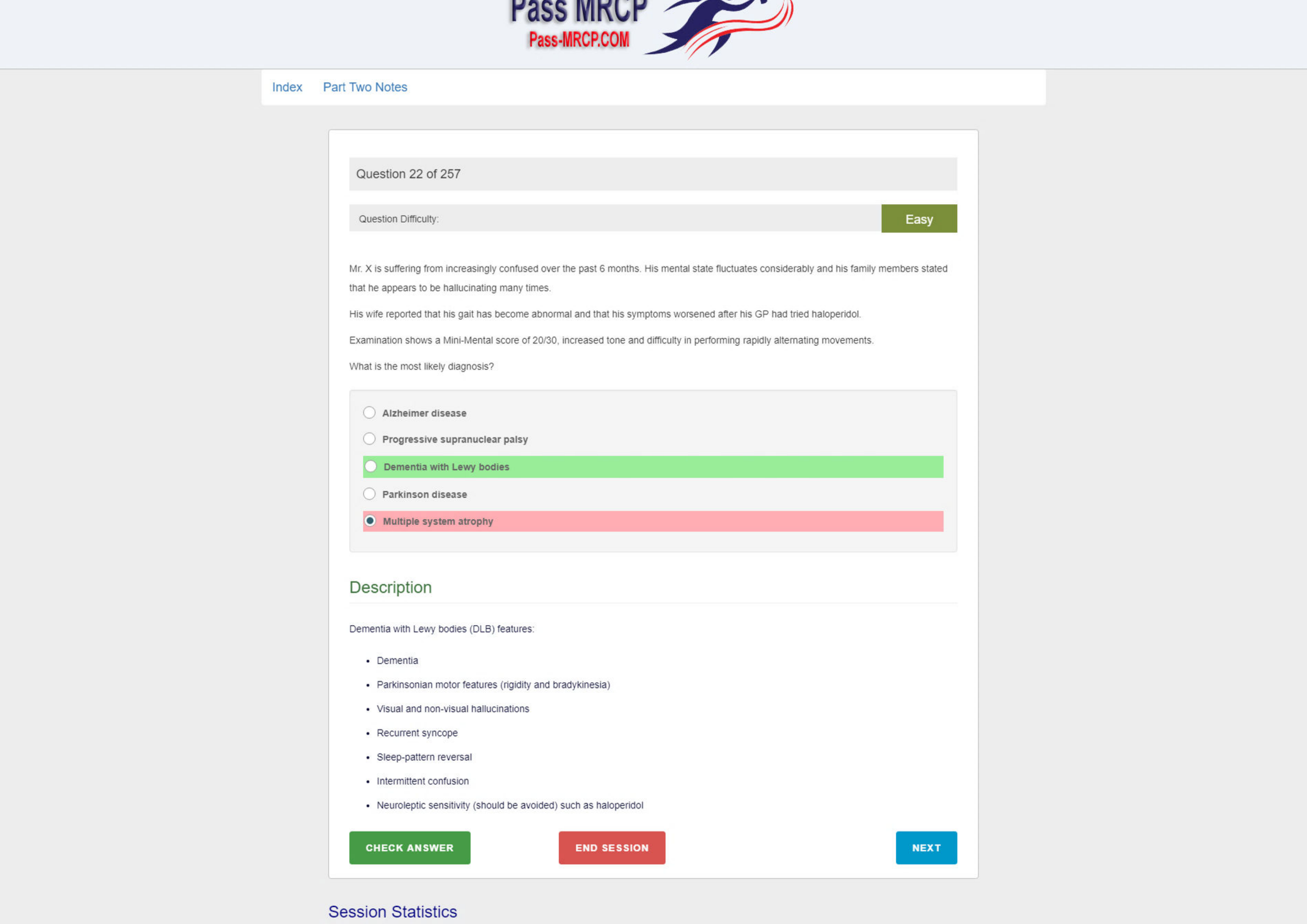
○ Left middle cerebral artery

Description

Occlusion of the posterior cerebral artery results in:

- Contralateral loss of pain and temperature sensations
- Contralateral hemianopia with macular sparing
- Prosopagnosia (failure to recognize familiar faces even the patient`s face on looking to the mirror)
- Contralateral deficits of facial nerve, vagus nerve and hypoglossal nerve
- Ipsilateral deficit of oculomotor nerve
- Horner syndrome

Session Statistics



Question 22 of 257

Question Difficulty: Easy

Mr. X is suffering from increasingly confused over the past 6 months. His mental state fluctuates considerably and his family members stated that he appears to be hallucinating many times.

His wife reported that his gait has become abnormal and that his symptoms worsened after his GP had tried haloperidol.

Examination shows a Mini-Mental score of 20/30, increased tone and difficulty in performing rapidly alternating movements.

What is the most likely diagnosis?

○ **Alzheimer disease**

○ **Progressive supranuclear palsy**

○ **Dementia with Lewy bodies**

○ **Parkinson disease**

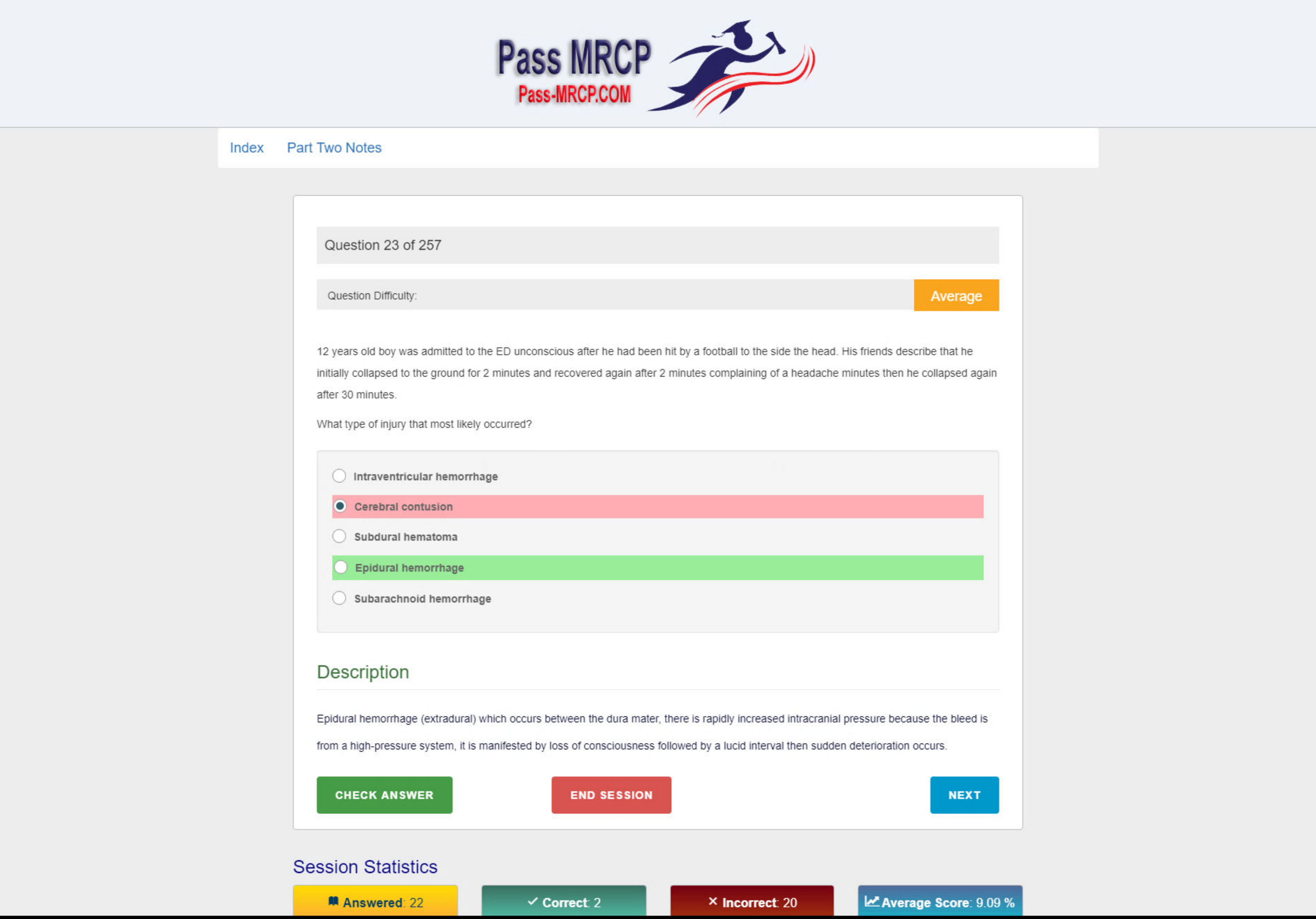
● **Multiple system atrophy**

Description

Dementia with Lewy bodies (DLB) features:

- Dementia
- Parkinsonian motor features (rigidity and bradykinesia)
- Visual and non-visual hallucinations
- Recurrent syncope
- Sleep-pattern reversal
- Intermittent confusion
- Neuroleptic sensitivity (should be avoided) such as haloperidol

Session Statistics



Question 23 of 257

Question Difficulty: Average

12 years old boy was admitted to the ED unconscious after he had been hit by a football to the side the head. His friends describe that he initially collapsed to the ground for 2 minutes and recovered again after 2 minutes complaining of a headache minutes then he collapsed again after 30 minutes.

What type of injury that most likely occurred?

- ○ Intraventricular hemorrhage
- ● Cerebral contusion
- ○ Subdural hematoma
- ○ Epidural hemorrhage
- ○ Subarachnoid hemorrhage

Description

Epidural hemorrhage (extradural) which occurs between the dura mater, there is rapidly increased intracranial pressure because the bleed is from a high-pressure system, it is manifested by loss of consciousness followed by a lucid interval then sudden deterioration occurs.

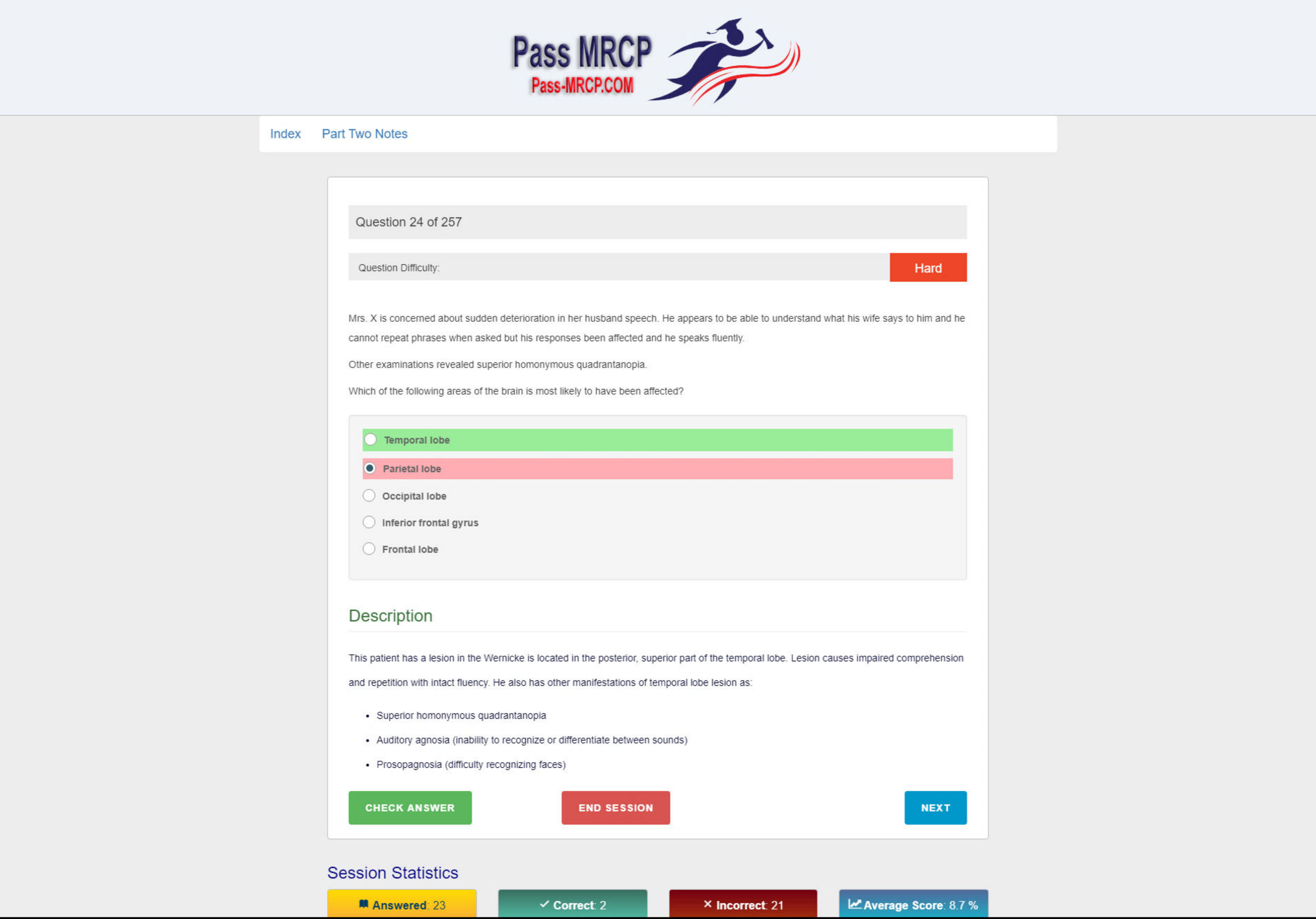
Session Statistics

Answered: 22

✓ Correct: 2

✕ Incorrect: 20

Average Score: 9.09 %



Question 24 of 257

Question Difficulty: **Hard**

Mrs. X is concerned about sudden deterioration in her husband speech. He appears to be able to understand what his wife says to him and he cannot repeat phrases when asked but his responses been affected and he speaks fluently.

Other examinations revealed superior homonymous quadrantanopia.

Which of the following areas of the brain is most likely to have been affected?

○ **Temporal lobe**
● **Parietal lobe**
○ **Occipital lobe**
○ **Inferior frontal gyrus**
○ **Frontal lobe**

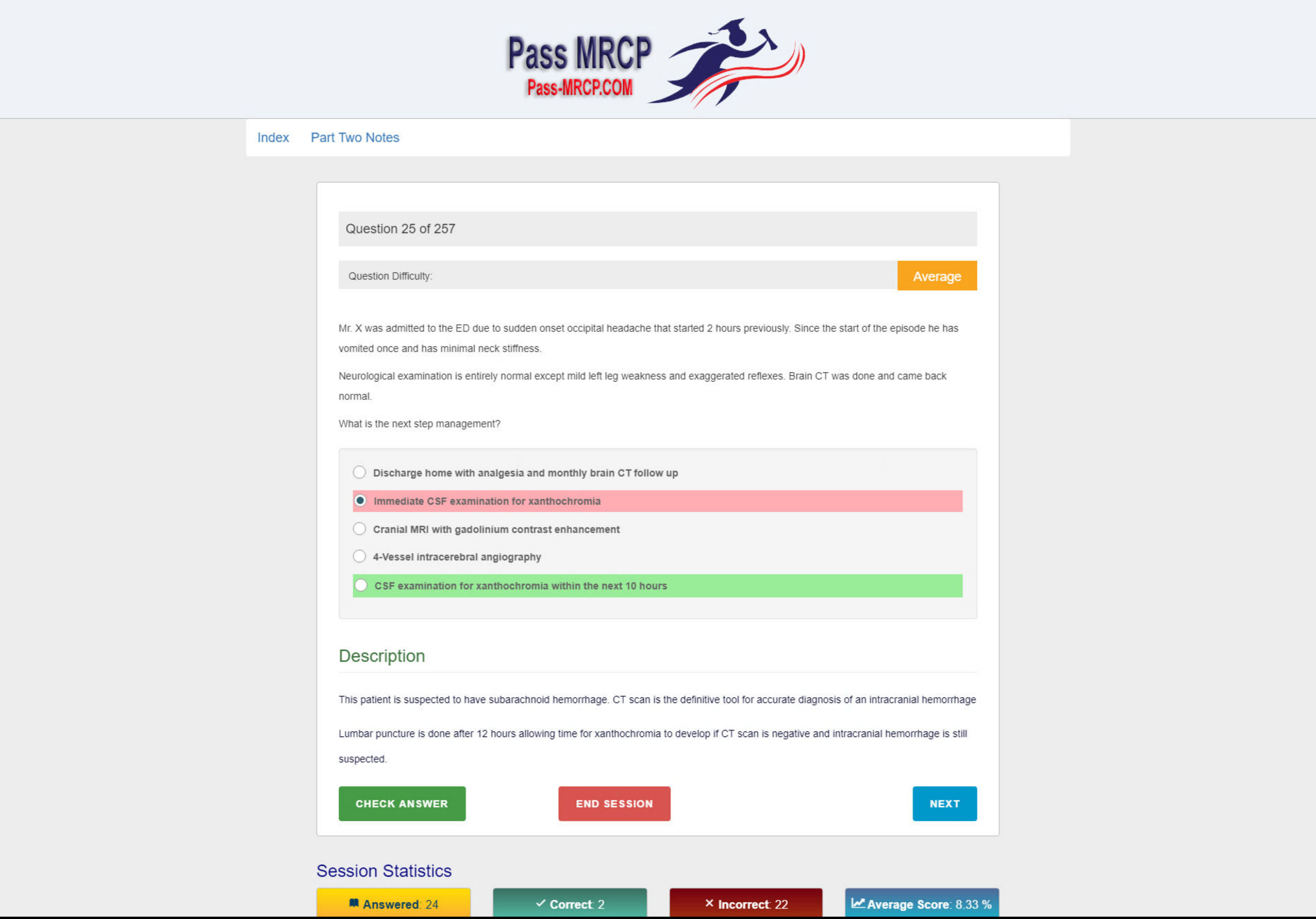
Description

This patient has a lesion in the Wernicke is located in the posterior, superior part of the temporal lobe. Lesion causes impaired comprehension and repetition with intact fluency. He also has other manifestations of temporal lobe lesion as:

- Superior homonymous quadrantanopia
- Auditory agnosia (inability to recognize or differentiate between sounds)
- Prosopagnosia (difficulty recognizing faces)

Session Statistics

Answered: 23
Correct: 2
Incorrect: 21
Average Score: 8.7 %



Question 25 of 257

Question Difficulty: Average

Mr. X was admitted to the ED due to sudden onset occipital headache that started 2 hours previously. Since the start of the episode he has vomited once and has minimal neck stiffness.

Neurological examination is entirely normal except mild left leg weakness and exaggerated reflexes. Brain CT was done and came back normal.

What is the next step management?

- ○ **Discharge home with analgesia and monthly brain CT follow up**
- ● **Immediate CSF examination for xanthochromia**
- ○ **Cranial MRI with gadolinium contrast enhancement**
- ○ **4-Vessel intracerebral angiography**
- ○ **CSF examination for xanthochromia within the next 10 hours**

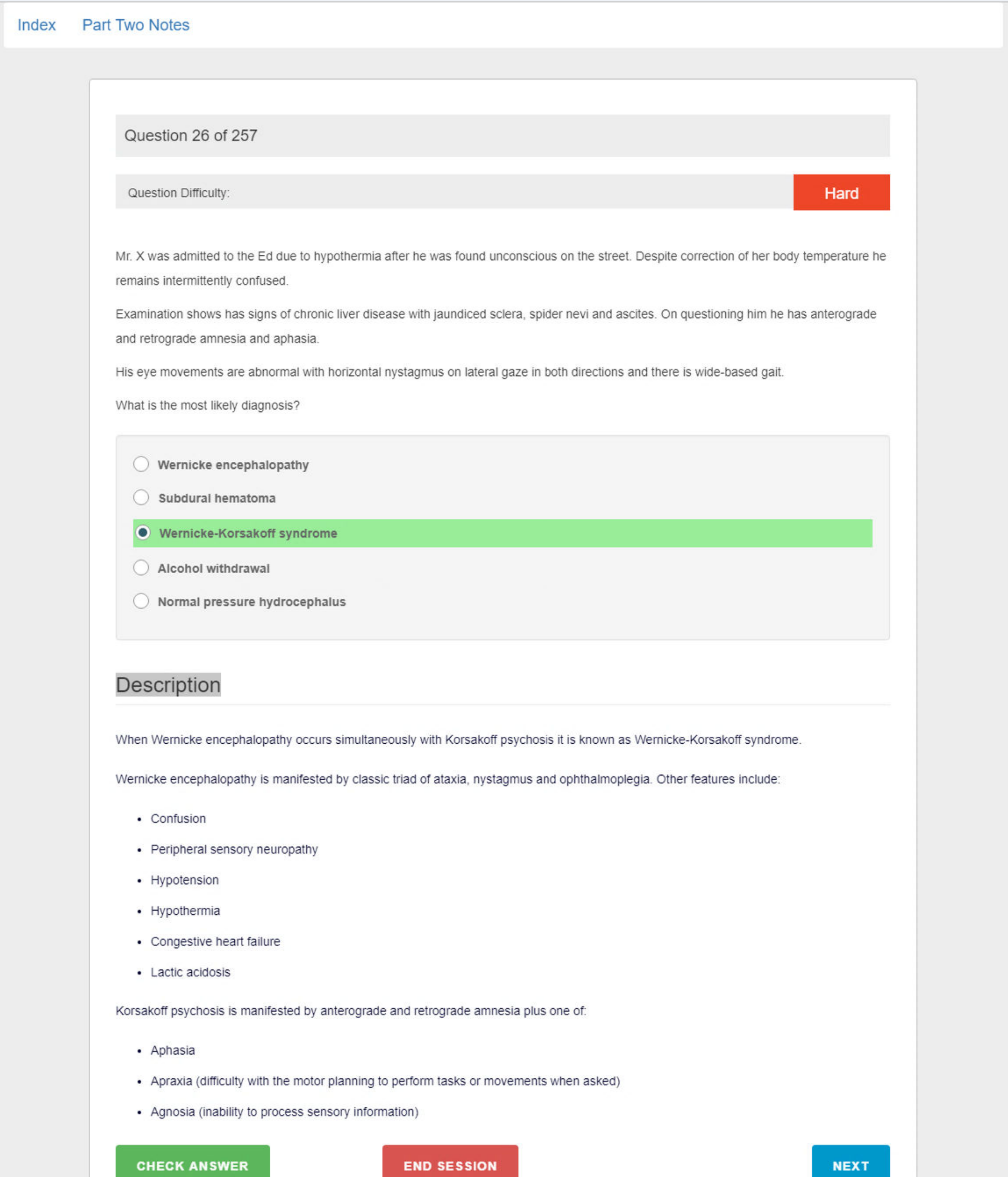
Description

This patient is suspected to have subarachnoid hemorrhage. CT scan is the definitive tool for accurate diagnosis of an intracranial hemorrhage

Lumbar puncture is done after 12 hours allowing time for xanthochromia to develop if CT scan is negative and intracranial hemorrhage is still suspected.

Session Statistics

Answered: 24 | **Correct**: 2 | **Incorrect**: 22 | **Average Score**: 8.33 %



Question 26 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the Ed due to hypothermia after he was found unconscious on the street. Despite correction of her body temperature he remains intermittently confused.

Examination shows has signs of chronic liver disease with jaundiced sclera, spider nevi and ascites. On questioning him he has anterograde and retrograde amnesia and aphasia.

His eye movements are abnormal with horizontal nystagmus on lateral gaze in both directions and there is wide-based gait.

What is the most likely diagnosis?

○ **Wernicke encephalopathy**
○ **Subdural hematoma**
● **Wernicke-Korsakoff syndrome**
○ **Alcohol withdrawal**
○ **Normal pressure hydrocephalus**

Description

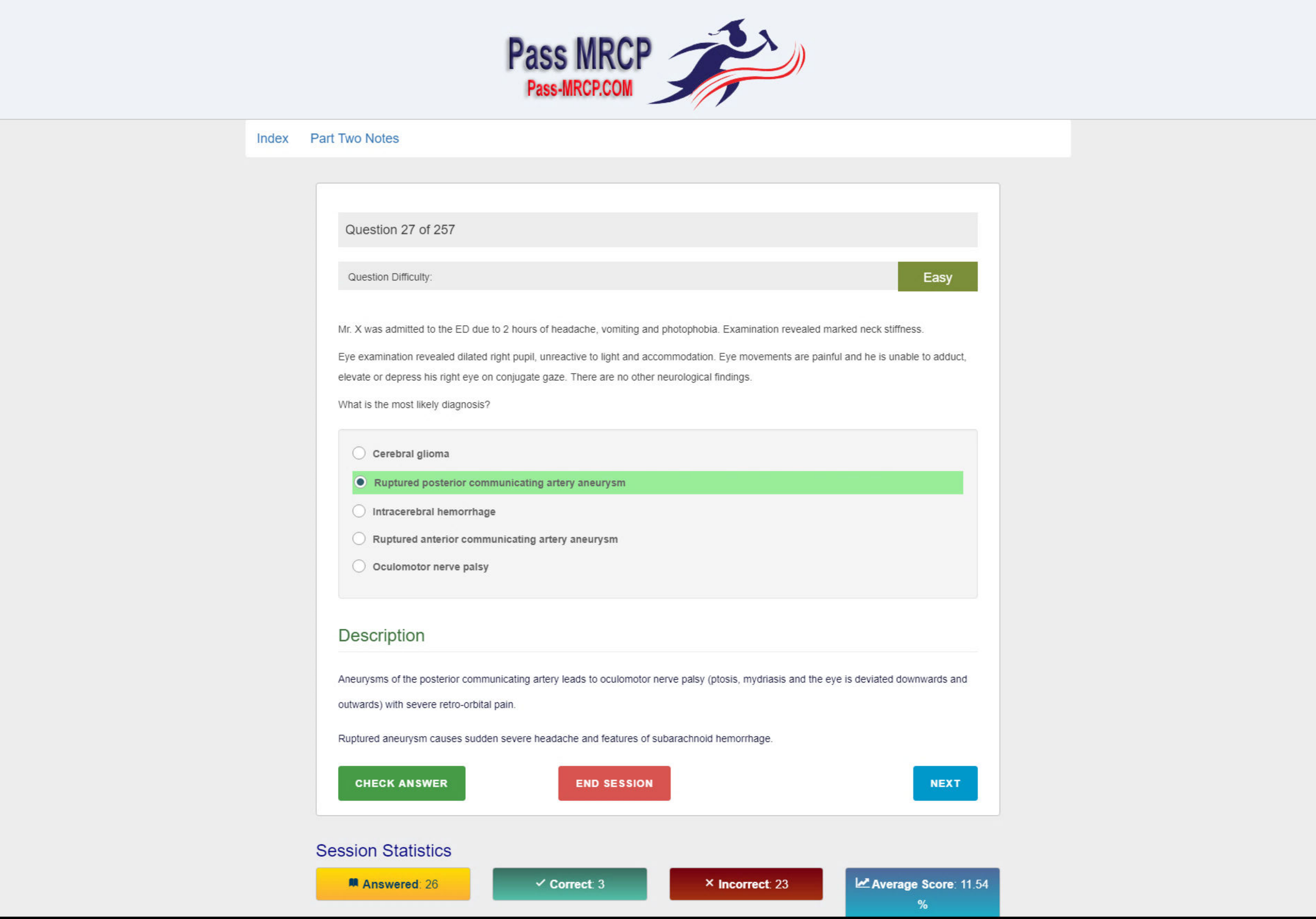
When Wernicke encephalopathy occurs simultaneously with Korsakoff psychosis it is known as Wernicke-Korsakoff syndrome.

Wernicke encephalopathy is manifested by classic triad of ataxia, nystagmus and ophthalmoplegia. Other features include:

- Confusion
- Peripheral sensory neuropathy
- Hypotension
- Hypothermia
- Congestive heart failure
- Lactic acidosis

Korsakoff psychosis is manifested by anterograde and retrograde amnesia plus one of:

- Aphasia
- Apraxia (difficulty with the motor planning to perform tasks or movements when asked)
- Agnosia (inability to process sensory information)



Question 27 of 257

Question Difficulty: Easy

Mr. X was admitted to the ED due to 2 hours of headache, vomiting and photophobia. Examination revealed marked neck stiffness.

Eye examination revealed dilated right pupil, unreactive to light and accommodation. Eye movements are painful and he is unable to adduct, elevate or depress his right eye on conjugate gaze. There are no other neurological findings.

What is the most likely diagnosis?

- ○ **Cerebral glioma**
- ● **Ruptured posterior communicating artery aneurysm**
- ○ **Intracerebral hemorrhage**
- ○ **Ruptured anterior communicating artery aneurysm**
- ○ **Oculomotor nerve palsy**

Description

Aneurysms of the posterior communicating artery leads to oculomotor nerve palsy (ptosis, mydriasis and the eye is deviated downwards and outwards) with severe retro-orbital pain.

Ruptured aneurysm causes sudden severe headache and features of subarachnoid hemorrhage.

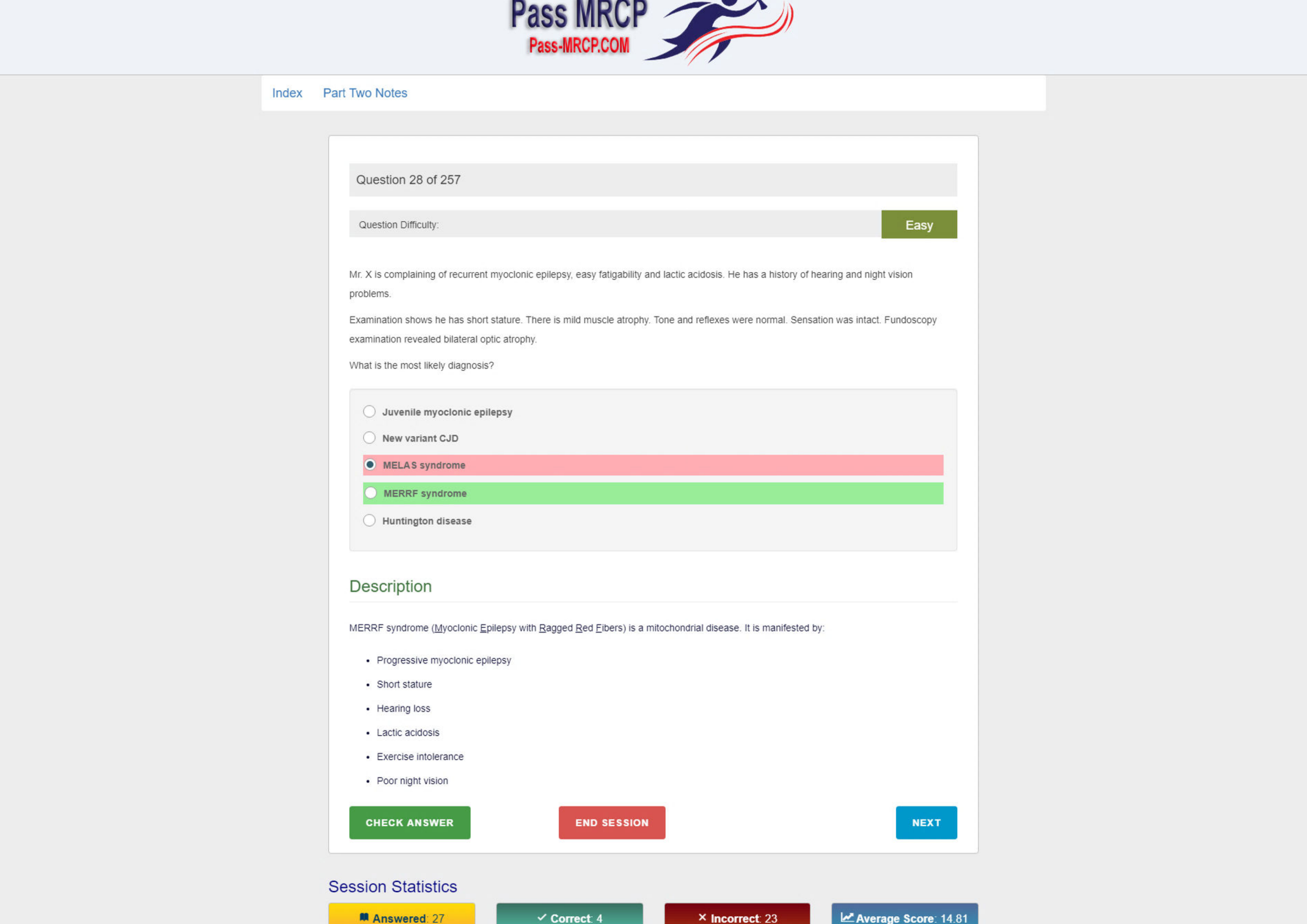
Session Statistics

Answered: 26

✓ **Correct**: 3

✕ **Incorrect**: 23

Average Score: 11.54 %



Question 28 of 257

Question Difficulty: Easy

Mr. X is complaining of recurrent myoclonic epilepsy, easy fatigability and lactic acidosis. He has a history of hearing and night vision problems.

Examination shows he has short stature. There is mild muscle atrophy. Tone and reflexes were normal. Sensation was intact. Fundoscopy examination revealed bilateral optic atrophy.

What is the most likely diagnosis?

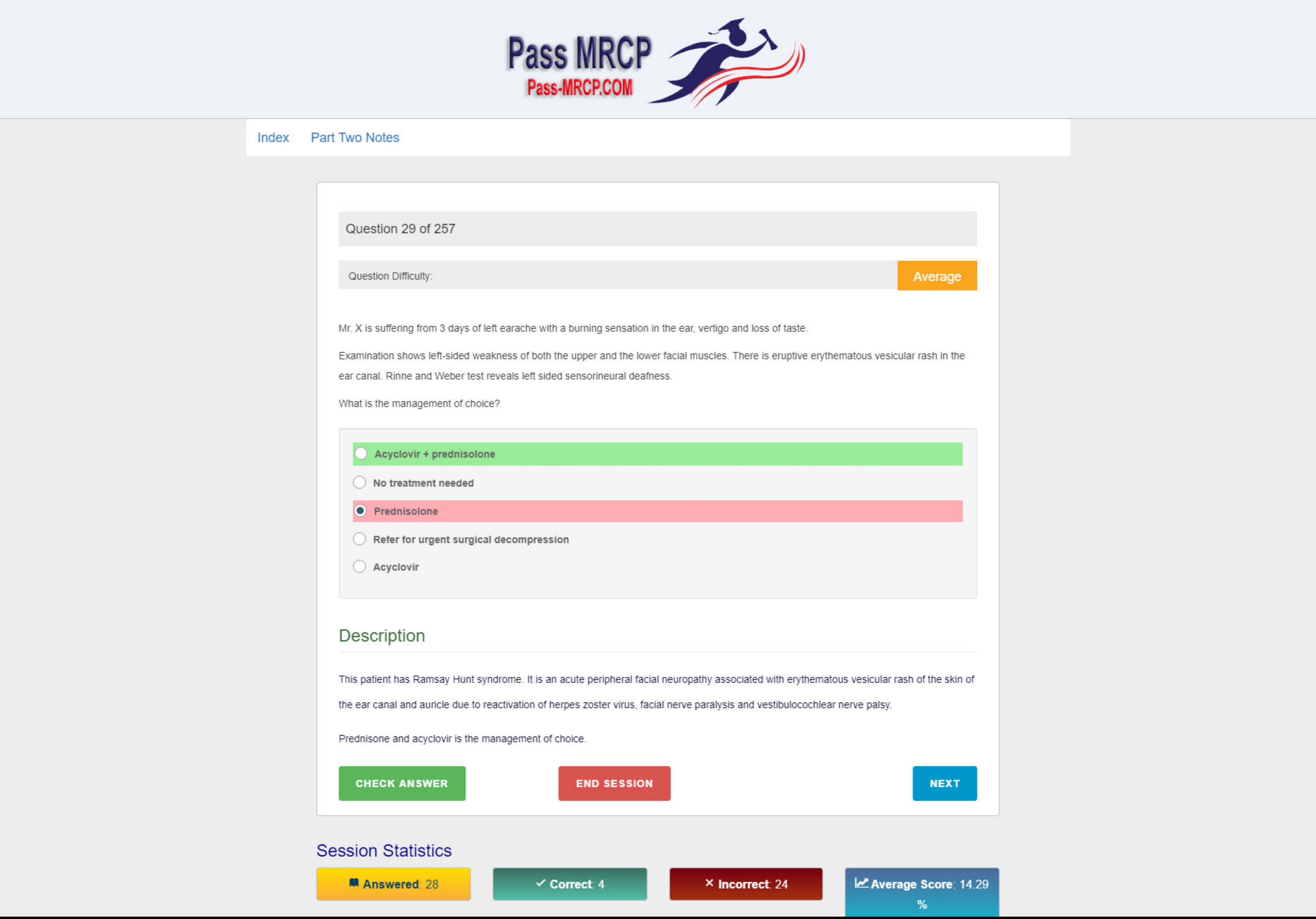
○ **Juvenile myoclonic epilepsy**
○ **New variant CJD**
● **MELAS syndrome**
○ **MERRF syndrome**
○ **Huntington disease**

Description

MERRF syndrome (Myoclonic Epilepsy with Ragged Red Fibers) is a mitochondrial disease. It is manifested by:

- Progressive myoclonic epilepsy
- Short stature
- Hearing loss
- Lactic acidosis
- Exercise intolerance
- Poor night vision

Session Statistics



Question 29 of 257

Question Difficulty: Average

Mr. X is suffering from 3 days of left earache with a burning sensation in the ear, vertigo and loss of taste.

Examination shows left-sided weakness of both the upper and the lower facial muscles. There is eruptive erythematous vesicular rash in the ear canal. Rinne and Weber test reveals left sided sensorineural deafness.

What is the management of choice?

- ○ Acyclovir + prednisolone
- ○ No treatment needed
- ● Prednisolone
- ○ Refer for urgent surgical decompression
- ○ Acyclovir

Description

This patient has Ramsay Hunt syndrome. It is an acute peripheral facial neuropathy associated with erythematous vesicular rash of the skin of the ear canal and auricle due to reactivation of herpes zoster virus, facial nerve paralysis and vestibulocochlear nerve palsy.

Prednisone and acyclovir is the management of choice.

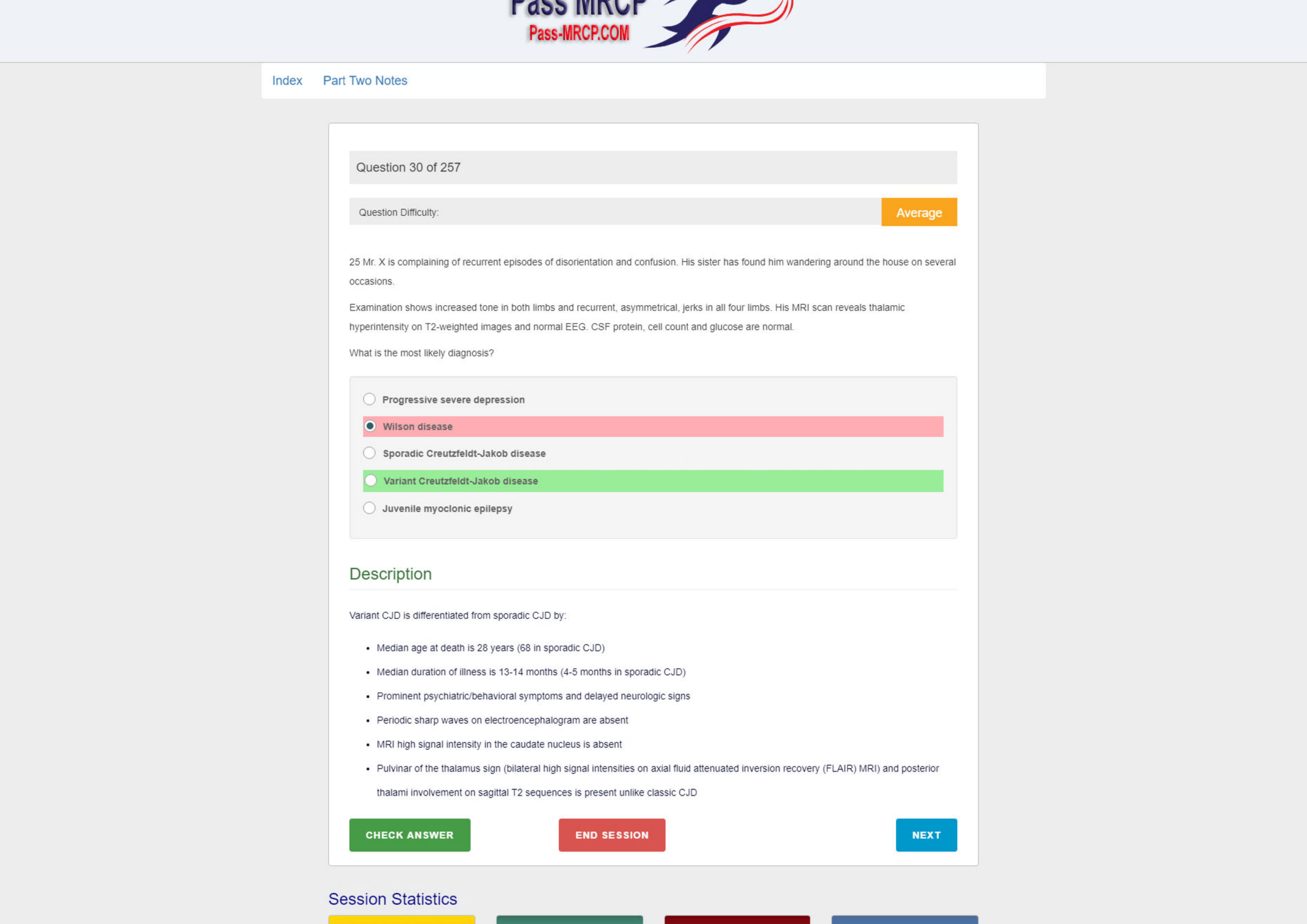
Session Statistics

Answered: 28

✓ **Correct**: 4

✕ **Incorrect**: 24

Average Score: 14.29 %



Question 30 of 257

Question Difficulty: Average

25 Mr. X is complaining of recurrent episodes of disorientation and confusion. His sister has found him wandering around the house on several occasions.

Examination shows increased tone in both limbs and recurrent, asymmetrical, jerks in all four limbs. His MRI scan reveals thalamic hyperintensity on T2-weighted images and normal EEG. CSF protein, cell count and glucose are normal.

What is the most likely diagnosis?

○ **Progressive severe depression**

● **Wilson disease**

○ **Sporadic Creutzfeldt-Jakob disease**

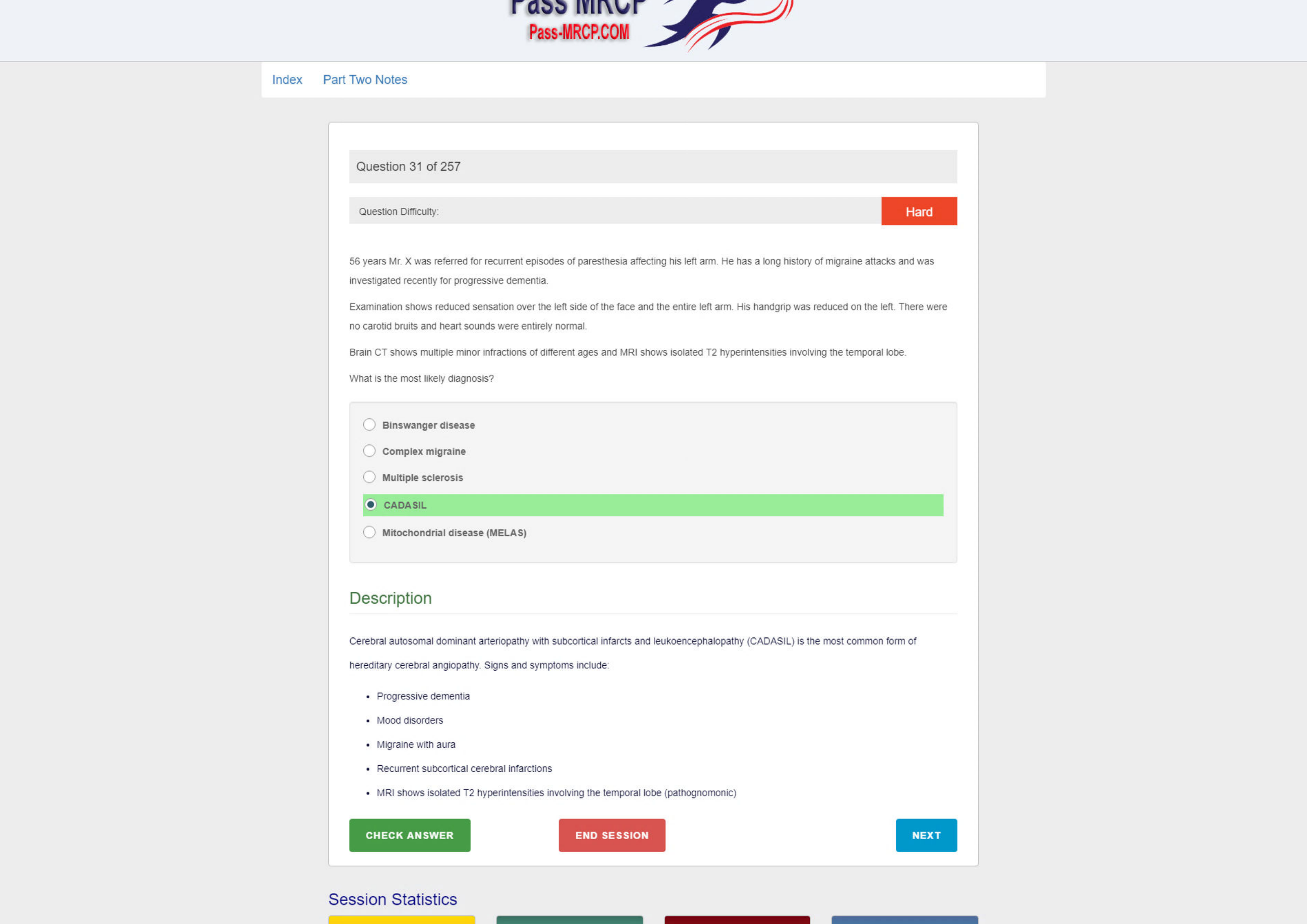
○ **Variant Creutzfeldt-Jakob disease**

○ **Juvenile myoclonic epilepsy**

Description

Variant CJD is differentiated from sporadic CJD by:

- Median age at death is 28 years (68 in sporadic CJD)
- Median duration of illness is 13-14 months (4-5 months in sporadic CJD)
- Prominent psychiatric/behavioral symptoms and delayed neurologic signs
- Periodic sharp waves on electroencephalogram are absent
- MRI high signal intensity in the caudate nucleus is absent
- Pulvinar of the thalamus sign (bilateral high signal intensities on axial fluid attenuated inversion recovery (FLAIR) MRI) and posterior thalami involvement on sagittal T2 sequences is present unlike classic CJD



Question 31 of 257

Question Difficulty: Hard

56 years Mr. X was referred for recurrent episodes of paresthesia affecting his left arm. He has a long history of migraine attacks and was investigated recently for progressive dementia.

Examination shows reduced sensation over the left side of the face and the entire left arm. His handgrip was reduced on the left. There were no carotid bruits and heart sounds were entirely normal.

Brain CT shows multiple minor infractions of different ages and MRI shows isolated T2 hyperintensities involving the temporal lobe.

What is the most likely diagnosis?

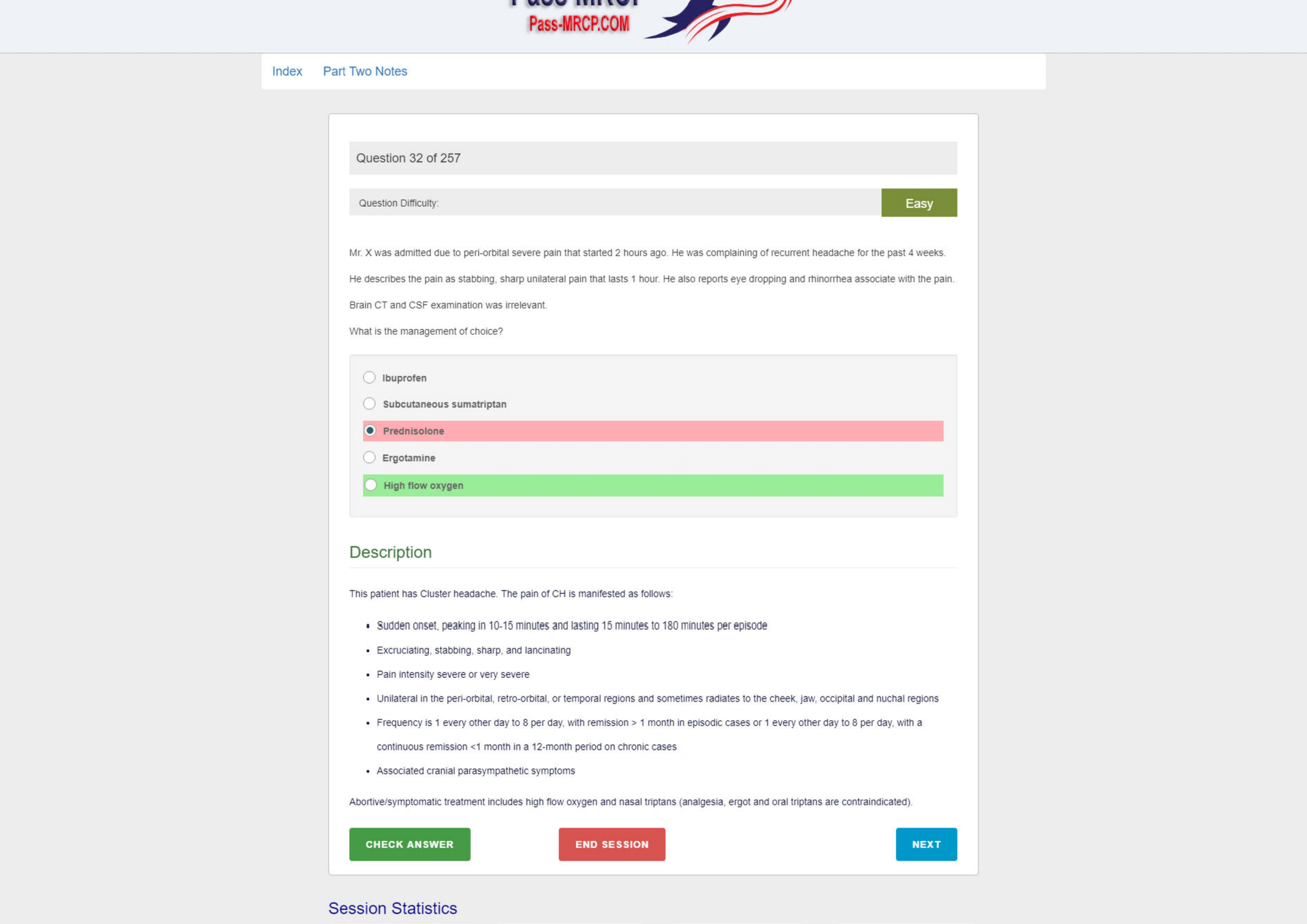
○ **Binswanger disease**
○ **Complex migraine**
○ **Multiple sclerosis**
● **CADASIL**
○ **Mitochondrial disease (MELAS)**

Description

Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL) is the most common form of hereditary cerebral angiopathy. Signs and symptoms include:

- Progressive dementia
- Mood disorders
- Migraine with aura
- Recurrent subcortical cerebral infarctions
- MRI shows isolated T2 hyperintensities involving the temporal lobe (pathognomonic)

Session Statistics



Question 32 of 257

Question Difficulty: Easy

Mr. X was admitted due to peri-orbital severe pain that started 2 hours ago. He was complaining of recurrent headache for the past 4 weeks.

He describes the pain as stabbing, sharp unilateral pain that lasts 1 hour. He also reports eye dropping and rhinorrhea associate with the pain.

Brain CT and CSF examination was irrelevant.

What is the management of choice?

○ **Ibuprofen**
○ **Subcutaneous sumatriptan**
● **Prednisolone**
○ **Ergotamine**
○ **High flow oxygen**

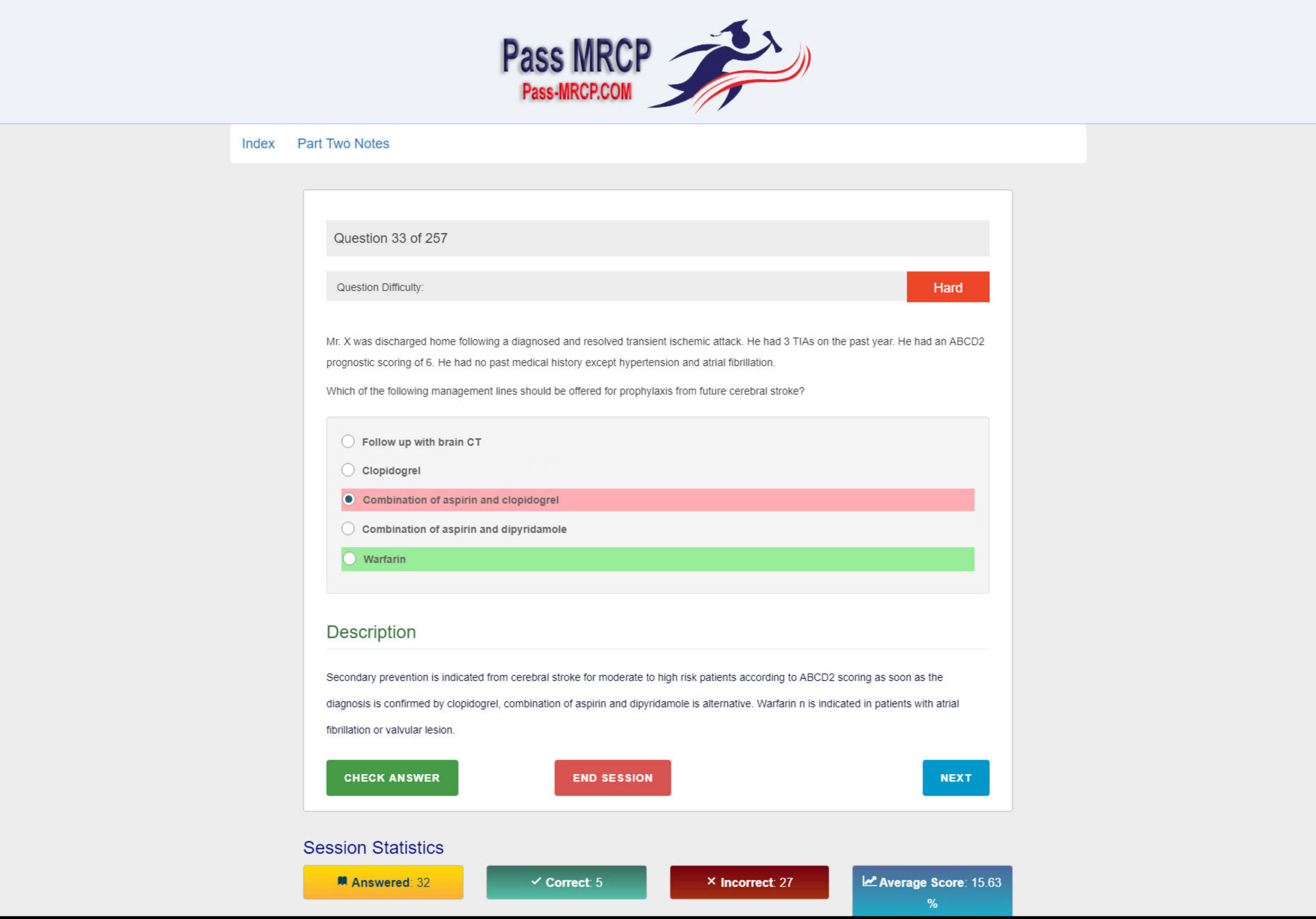
Description

This patient has Cluster headache. The pain of CH is manifested as follows:

- Sudden onset, peaking in 10-15 minutes and lasting 15 minutes to 180 minutes per episode
- Excruciating, stabbing, sharp, and lancinating
- Pain intensity severe or very severe
- Unilateral in the peri-orbital, retro-orbital, or temporal regions and sometimes radiates to the cheek, jaw, occipital and nuchal regions
- Frequency is 1 every other day to 8 per day, with remission > 1 month in episodic cases or 1 every other day to 8 per day, with a continuous remission <1 month in a 12-month period on chronic cases
- Associated cranial parasympathetic symptoms

Abortive/symptomatic treatment includes high flow oxygen and nasal triptans (analgesia, ergot and oral triptans are contraindicated).

Session Statistics



Question 33 of 257

Question Difficulty: Hard

Mr. X was discharged home following a diagnosed and resolved transient ischemic attack. He had 3 TIAs on the past year. He had an ABCD2 prognostic scoring of 6. He had no past medical history except hypertension and atrial fibrillation.

Which of the following management lines should be offered for prophylaxis from future cerebral stroke?

- ○ Follow up with brain CT
- ○ Clopidogrel
- ● Combination of aspirin and clopidogrel
- ○ Combination of aspirin and dipyridamole
- ○ Warfarin

Description

Secondary prevention is indicated from cerebral stroke for moderate to high risk patients according to ABCD2 scoring as soon as the diagnosis is confirmed by clopidogrel, combination of aspirin and dipyridamole is alternative. Warfarin n is indicated in patients with atrial fibrillation or valvular lesion.

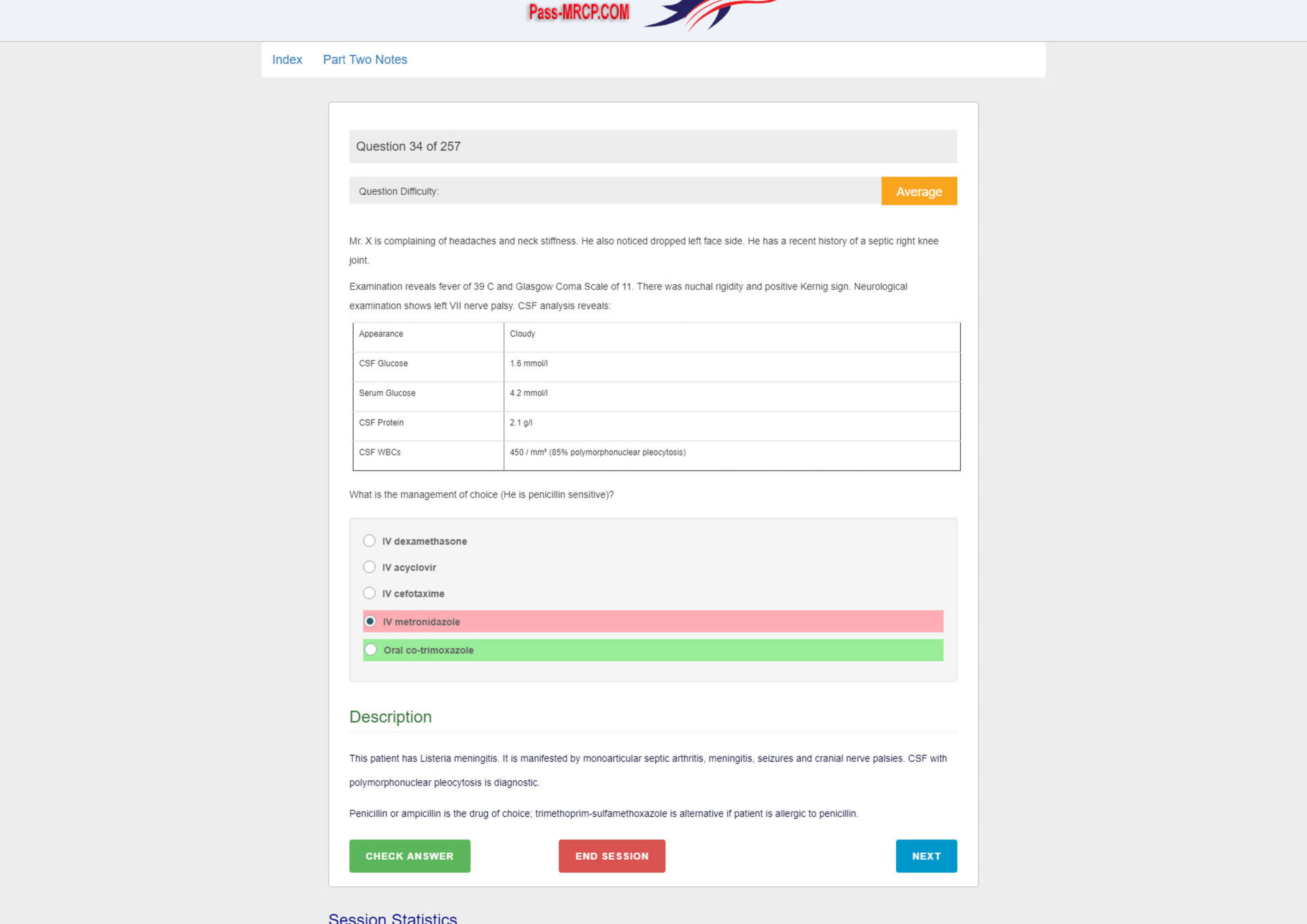
Session Statistics

Answered: 32

✓ Correct: 5

✕ Incorrect: 27

Average Score: 15.63 %



Question 34 of 257

Question Difficulty: **Average**

Mr. X is complaining of headaches and neck stiffness. He also noticed dropped left face side. He has a recent history of a septic right knee joint.

Examination reveals fever of 39 C and Glasgow Coma Scale of 11. There was nuchal rigidity and positive Kernig sign. Neurological examination shows left VII nerve palsy. CSF analysis reveals:

Appearance	Cloudy
CSF Glucose	1.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	2.1 g/l
CSF WBCs	450 / mm³ (85% polymorphonuclear pleocytosis)

What is the management of choice (He is penicillin sensitive)?

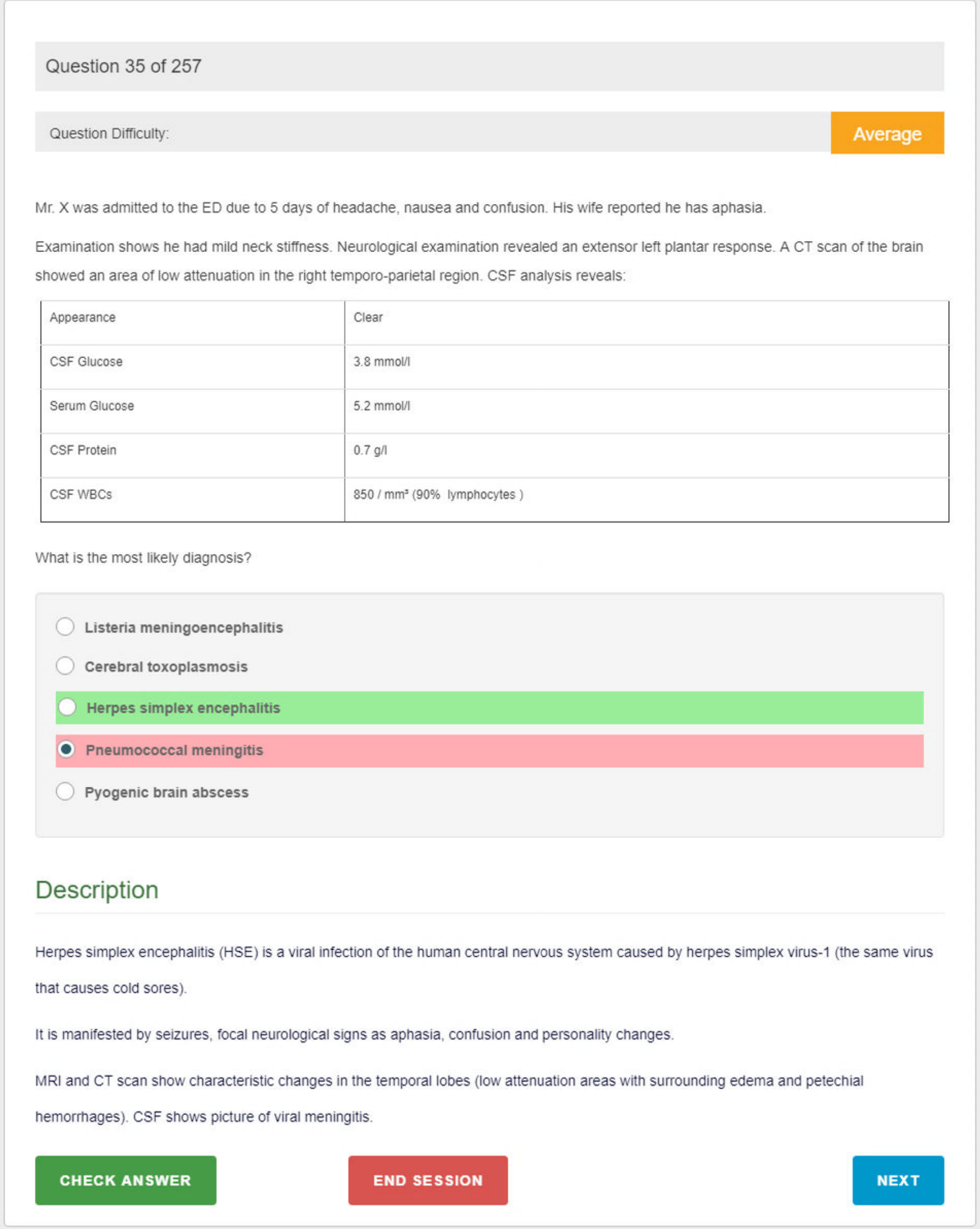
- ○ **IV dexamethasone**
- ○ **IV acyclovir**
- ○ **IV cefotaxime**
- ● **IV metronidazole**
- ○ **Oral co-trimoxazole**

Description

This patient has Listeria meningitis. It is manifested by monoarticular septic arthritis, meningitis, seizures and cranial nerve palsies. CSF with polymorphonuclear pleocytosis is diagnostic.

Penicillin or ampicillin is the drug of choice; trimethoprim-sulfamethoxazole is alternative if patient is allergic to penicillin.

Session Statistics



Question 35 of 257

Mr. X was admitted to the ED due to 5 days of headache, nausea and confusion. His wife reported he has aphasia.

Examination shows he had mild neck stiffness. Neurological examination revealed an extensor left plantar response. A CT scan of the brain showed an area of low attenuation in the right temporo-parietal region. CSF analysis reveals:

Appearance	Clear
CSF Glucose	3.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	850 / mm^3 (90% lymphocytes)

What is the most likely diagnosis?

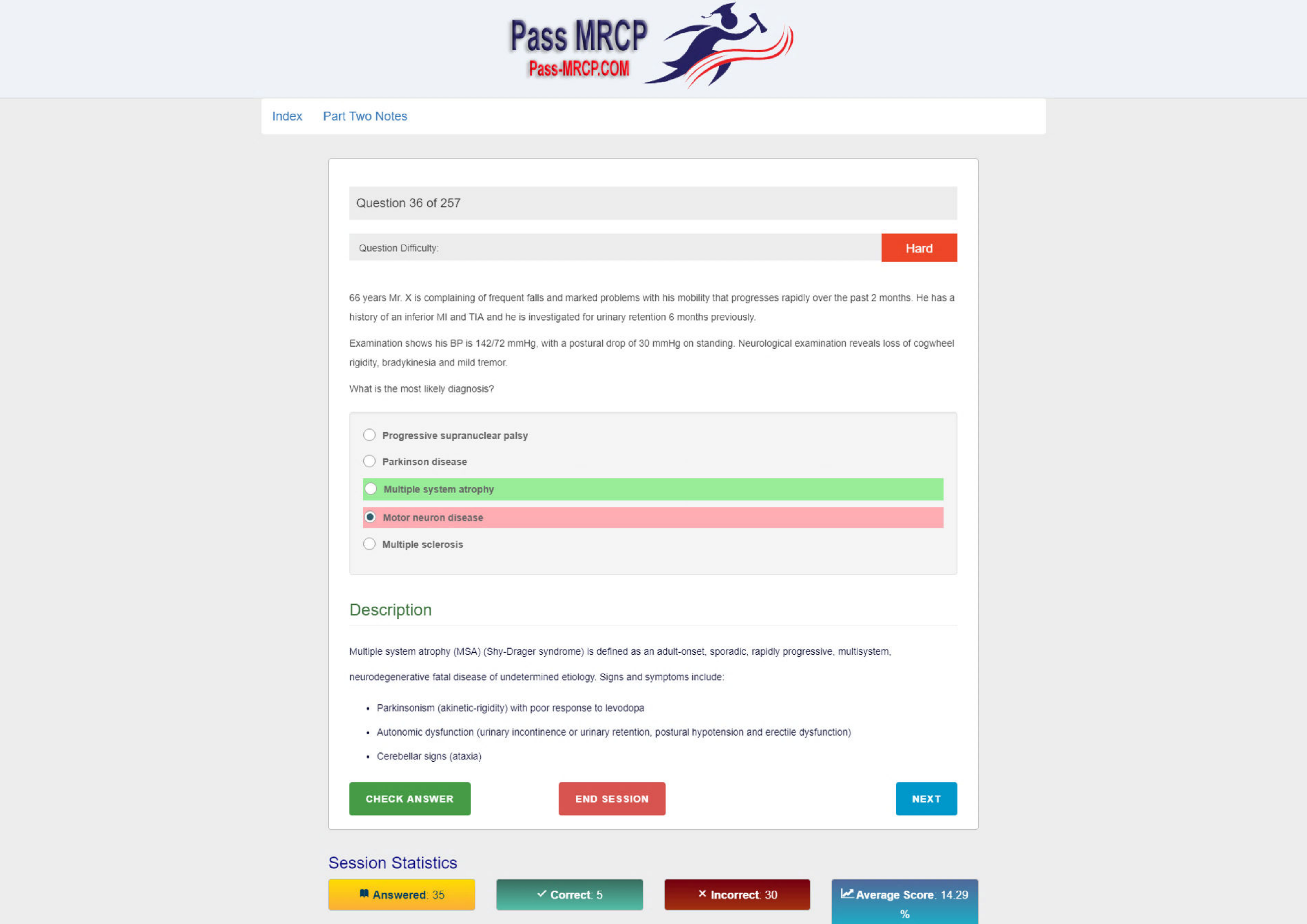
- ○ **Listeria meningoencephalitis**
- ○ **Cerebral toxoplasmosis**
- ○ **Herpes simplex encephalitis**
- ● **Pneumococcal meningitis**
- ○ **Pyogenic brain abscess**

Description

Herpes simplex encephalitis (HSE) is a viral infection of the human central nervous system caused by herpes simplex virus-1 (the same virus that causes cold sores).

It is manifested by seizures, focal neurological signs as aphasia, confusion and personality changes.

MRI and CT scan show characteristic changes in the temporal lobes (low attenuation areas with surrounding edema and petechial hemorrhages). CSF shows picture of viral meningitis.



Question 36 of 257

Question Difficulty: Hard

66 years Mr. X is complaining of frequent falls and marked problems with his mobility that progresses rapidly over the past 2 months. He has a history of an inferior MI and TIA and he is investigated for urinary retention 6 months previously.

Examination shows his BP is 142/72 mmHg, with a postural drop of 30 mmHg on standing. Neurological examination reveals loss of cogwheel rigidity, bradykinesia and mild tremor.

What is the most likely diagnosis?

○ Progressive supranuclear palsy
○ Parkinson disease
○ Multiple system atrophy
● Motor neuron disease
○ Multiple sclerosis

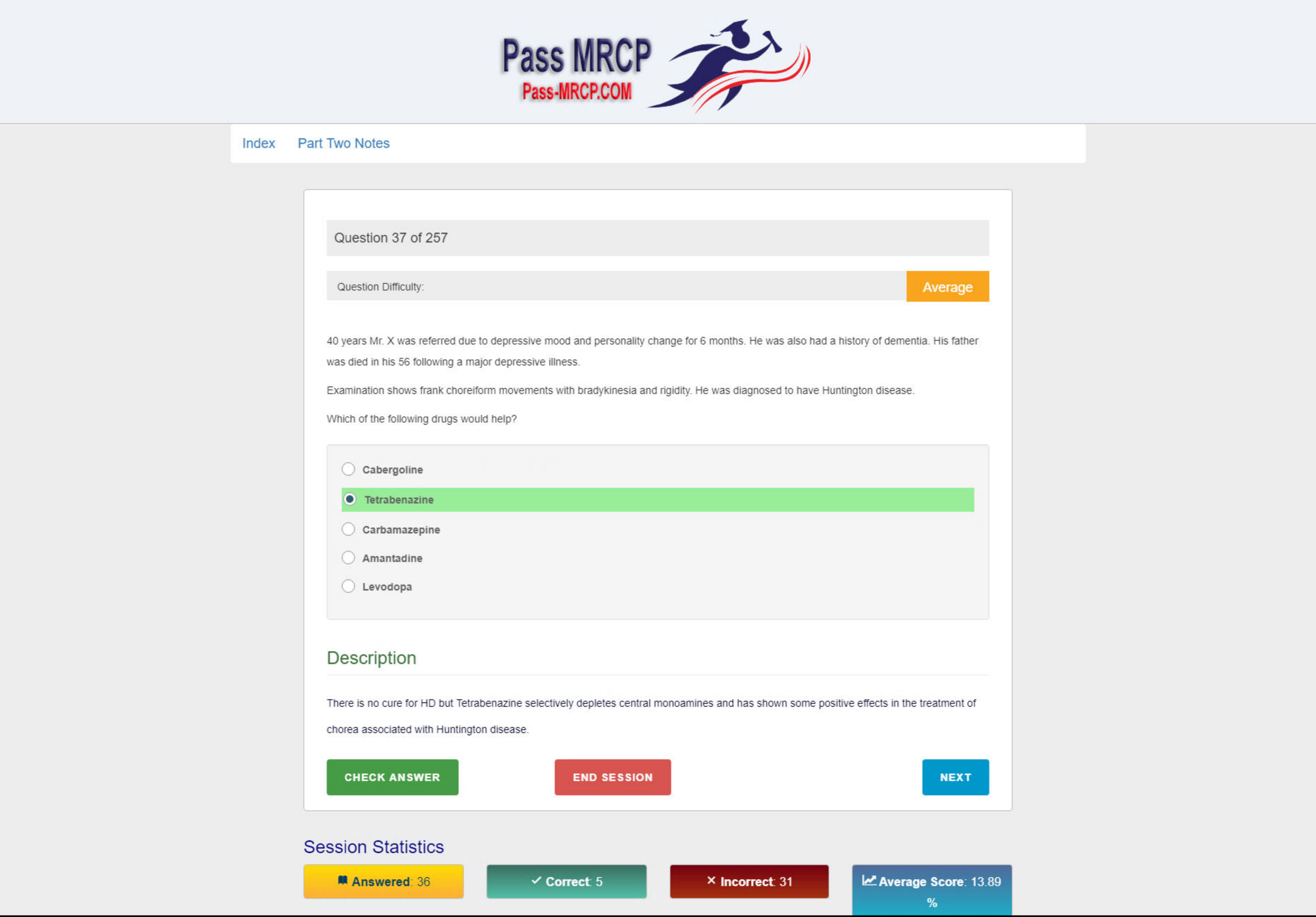
Description

Multiple system atrophy (MSA) (Shy-Drager syndrome) is defined as an adult-onset, sporadic, rapidly progressive, multisystem, neurodegenerative fatal disease of undetermined etiology. Signs and symptoms include:

- Parkinsonism (akinetic-rigidity) with poor response to levodopa
- Autonomic dysfunction (urinary incontinence or urinary retention, postural hypotension and erectile dysfunction)
- Cerebellar signs (ataxia)

Session Statistics

Answered: 35
Correct: 5
Incorrect: 30
Average Score: 14.29 %



Question 37 of 257

Question Difficulty: Average

40 years Mr. X was referred due to depressive mood and personality change for 6 months. He was also had a history of dementia. His father was died in his 56 following a major depressive illness.

Examination shows frank choreiform movements with bradykinesia and rigidity. He was diagnosed to have Huntington disease.

Which of the following drugs would help?

- ○ Cabergoline
- ● Tetrabenazine
- ○ Carbamazepine
- ○ Amantadine
- ○ Levodopa

Description

There is no cure for HD but Tetrabenazine selectively depletes central monoamines and has shown some positive effects in the treatment of chorea associated with Huntington disease.

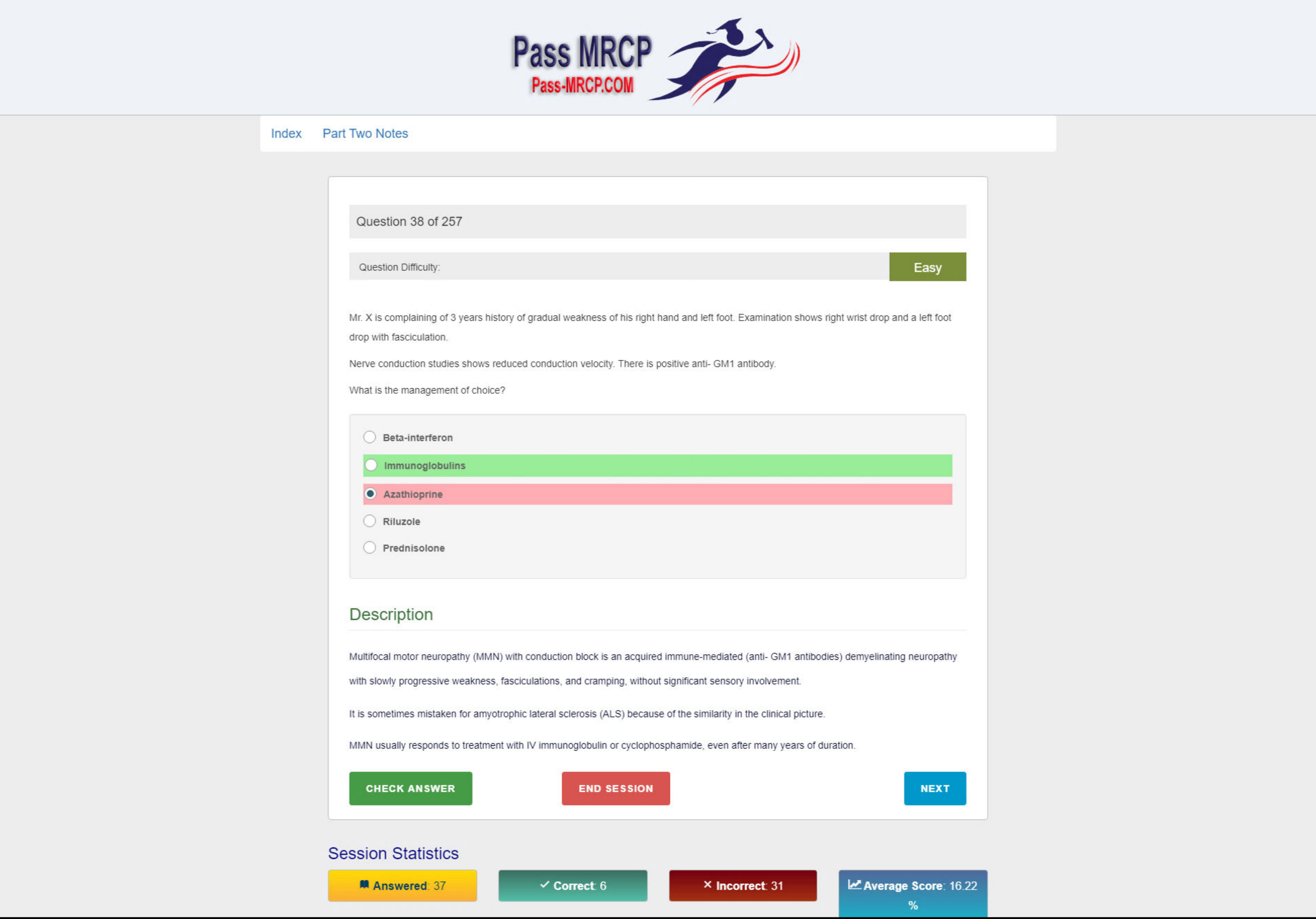
Session Statistics

Answered: 36

✓ Correct: 5

✕ Incorrect: 31

Average Score: 13.89 %



Question 38 of 257

Question Difficulty: Easy

Mr. X is complaining of 3 years history of gradual weakness of his right hand and left foot. Examination shows right wrist drop and a left foot drop with fasciculation.

Nerve conduction studies shows reduced conduction velocity. There is positive anti- GM1 antibody.

What is the management of choice?

- ○ Beta-interferon
- ○ Immunoglobulins
- ● Azathioprine
- ○ Riluzole
- ○ Prednisolone

Description

Multifocal motor neuropathy (MMN) with conduction block is an acquired immune-mediated (anti- GM1 antibodies) demyelinating neuropathy with slowly progressive weakness, fasciculations, and cramping, without significant sensory involvement.

It is sometimes mistaken for amyotrophic lateral sclerosis (ALS) because of the similarity in the clinical picture.

MMN usually responds to treatment with IV immunoglobulin or cyclophosphamide, even after many years of duration.

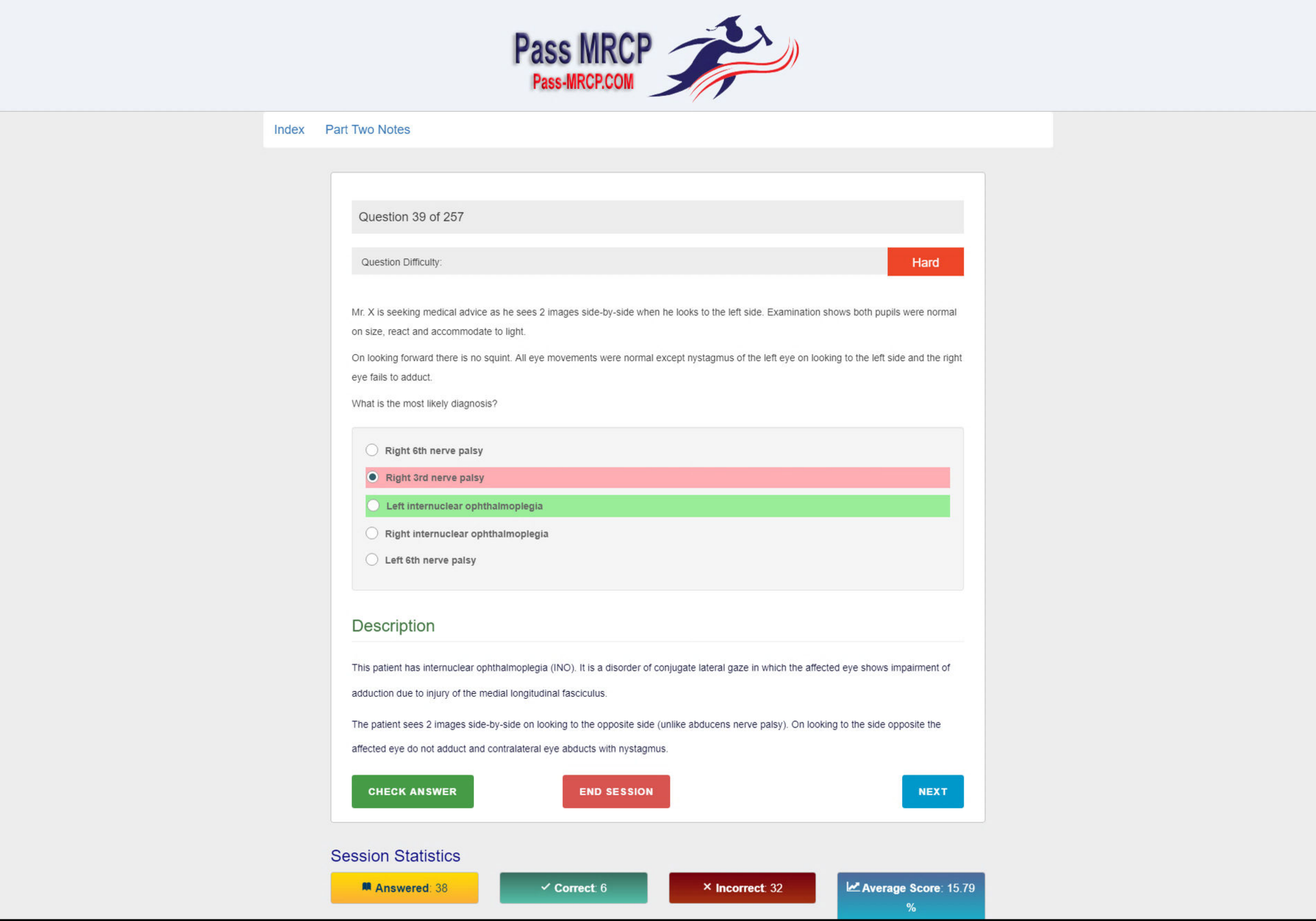
Session Statistics

Answered: 37

✓ **Correct**: 6

✕ **Incorrect**: 31

Average Score: 16.22 %



Question 39 of 257

Question Difficulty: Hard

Mr. X is seeking medical advice as he sees 2 images side-by-side when he looks to the left side. Examination shows both pupils were normal on size, react and accommodate to light.

On looking forward there is no squint. All eye movements were normal except nystagmus of the left eye on looking to the left side and the right eye fails to adduct.

What is the most likely diagnosis?

- ○ Right 6th nerve palsy
- ● Right 3rd nerve palsy
- ○ Left internuclear ophthalmoplegia
- ○ Right internuclear ophthalmoplegia
- ○ Left 6th nerve palsy

Description

This patient has internuclear ophthalmoplegia (INO). It is a disorder of conjugate lateral gaze in which the affected eye shows impairment of adduction due to injury of the medial longitudinal fasciculus.

The patient sees 2 images side-by-side on looking to the opposite side (unlike abducens nerve palsy). On looking to the side opposite the affected eye do not adduct and contralateral eye abducts with nystagmus.

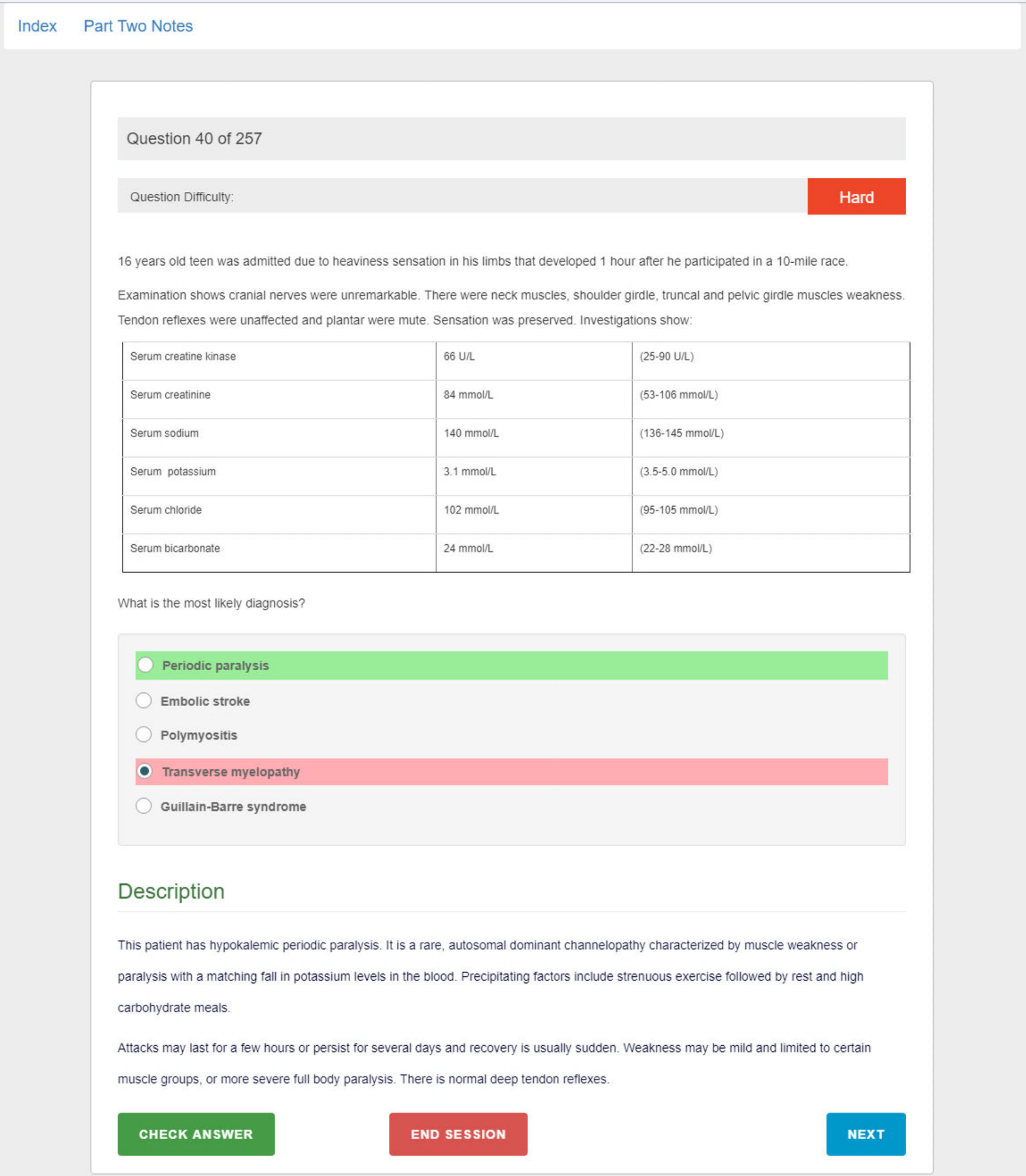
Session Statistics

Answered: 38

✓ Correct: 6

✕ Incorrect: 32

Average Score: 15.79 %



Question 40 of 257

Question Difficulty: **Hard**

16 years old teen was admitted due to heaviness sensation in his limbs that developed 1 hour after he participated in a 10-mile race.

Examination shows cranial nerves were unremarkable. There were neck muscles, shoulder girdle, truncal and pelvic girdle muscles weakness. Tendon reflexes were unaffected and plantar were mute. Sensation was preserved. Investigations show:

Serum creatine kinase	66 U/L	(25-90 U/L)
Serum creatinine	84 mmol/L	(53-106 mmol/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	3.1 mmol/L	(3.5-5.0 mmol/L)
Serum chloride	102 mmol/L	(95-105 mmol/L)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

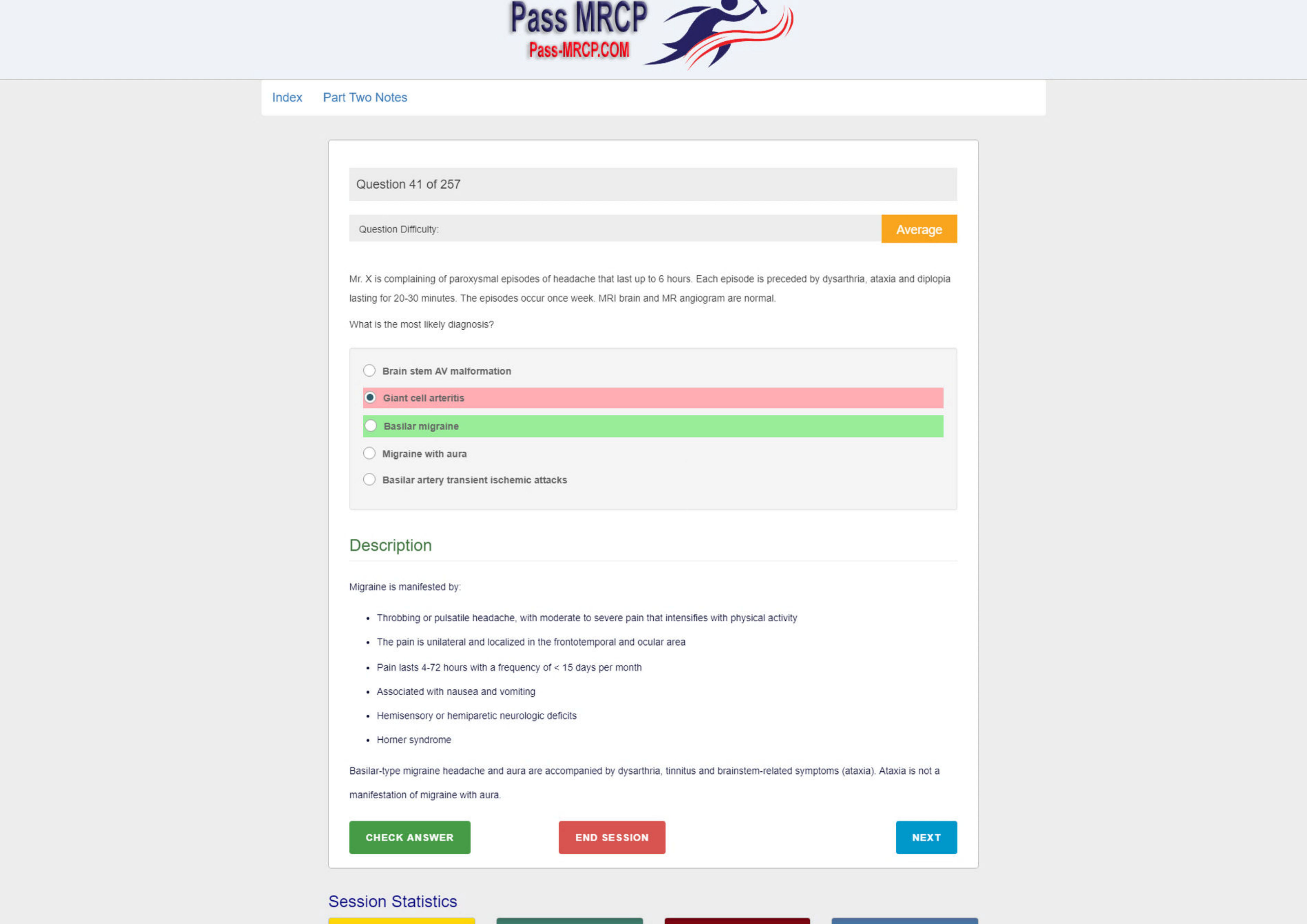
What is the most likely diagnosis?

- ○ **Periodic paralysis**
- ○ **Embolic stroke**
- ○ **Polymyositis**
- ● **Transverse myelopathy**
- ○ **Guillain-Barre syndrome**

Description

This patient has hypokalemic periodic paralysis. It is a rare, autosomal dominant channelopathy characterized by muscle weakness or paralysis with a matching fall in potassium levels in the blood. Precipitating factors include strenuous exercise followed by rest and high carbohydrate meals.

Attacks may last for a few hours or persist for several days and recovery is usually sudden. Weakness may be mild and limited to certain muscle groups, or more severe full body paralysis. There is normal deep tendon reflexes.



Question 41 of 257

Question Difficulty: Average

Mr. X is complaining of paroxysmal episodes of headache that last up to 6 hours. Each episode is preceded by dysarthria, ataxia and diplopia lasting for 20-30 minutes. The episodes occur once week. MRI brain and MR angiogram are normal.

What is the most likely diagnosis?

○ Brain stem AV malformation
● Giant cell arteritis
○ Basilar migraine
○ Migraine with aura
○ Basilar artery transient ischemic attacks

Description

Migraine is manifested by:

- Throbbing or pulsatile headache, with moderate to severe pain that intensifies with physical activity
- The pain is unilateral and localized in the frontotemporal and ocular area
- Pain lasts 4-72 hours with a frequency of < 15 days per month
- Associated with nausea and vomiting
- Hemisensory or hemiparetic neurologic deficits
- Horner syndrome

Basilar-type migraine headache and aura are accompanied by dysarthria, tinnitus and brainstem-related symptoms (ataxia). Ataxia is not a manifestation of migraine with aura.

Question 42 of 257

Question Difficulty: **Easy**

44 years Mr. X was referred due to change in his mood and personality for 6 months. He was also referred 1 year ago for investigating dementia and abnormal limbs movements. His father was died in his 56 following a major depressive illness.

Examination shows frank choreiform movements with bradykinesia and rigidity. His Mini-Mental State Examination was 21/30.

What is the likely diagnosis?

○ **Inherited Creutzfeldt-Jakob disease**
● **Huntington chorea**
○ **Sydenham chorea**
○ **Tardive dyskinesia**
○ **Wilson disease**

Description

This patient has Huntington disease. HD is an incurable, adult-onset, autosomal dominant inherited disorder on chromosome 4 associated with cell loss within a specific subset of neurons in the basal ganglia and cortex.

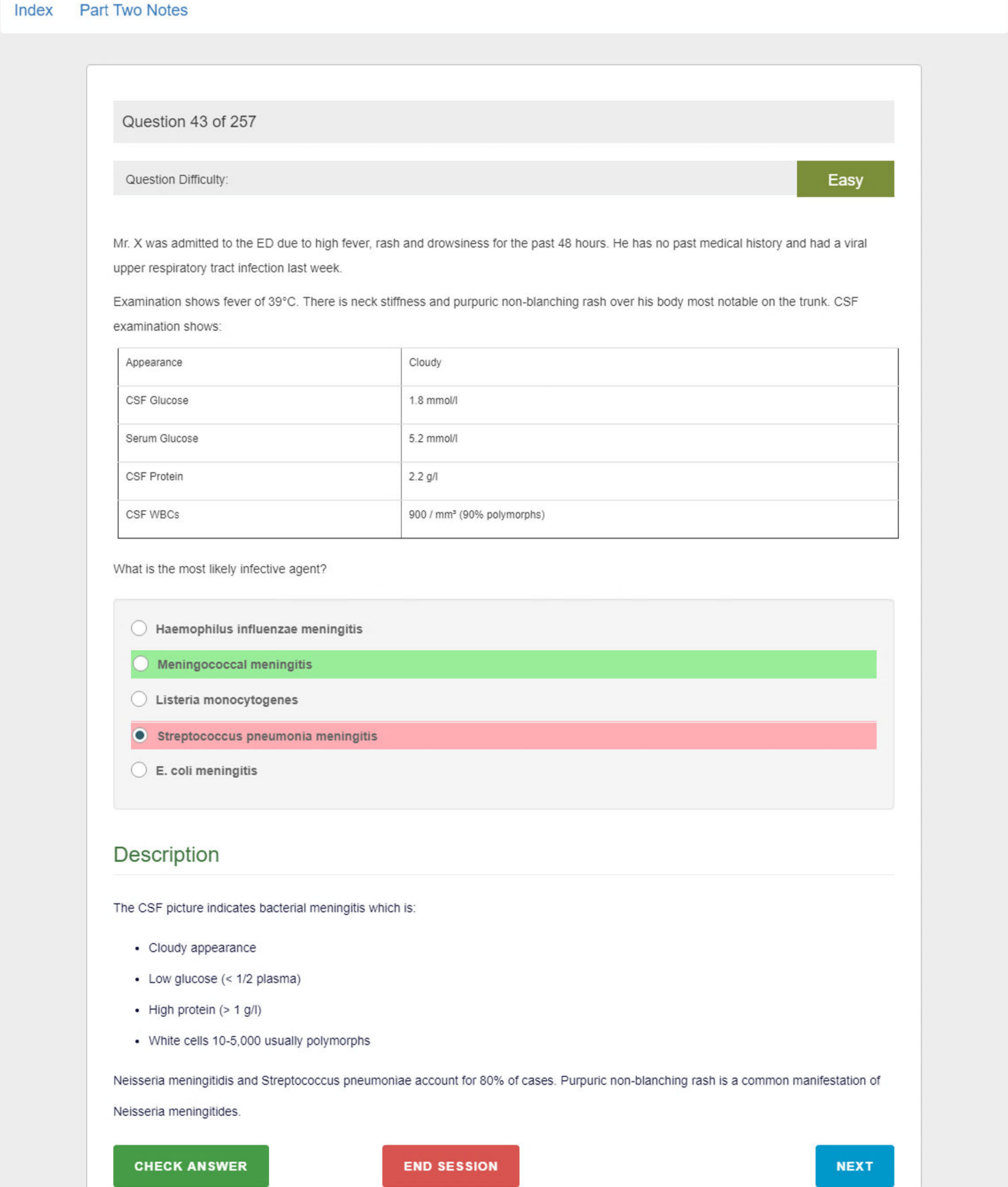
Inheritance through the father can lead to earlier onset through succeeding generations, a phenomenon termed anticipation. Features include:

- Chorea that is gradually replaced by dystonia and Parkinsonian features (bradykinesia and rigidity)
- Progressive dementia
- Cognitive and behavioral disorder
- Psychosis, obsessive-compulsive symptoms, sexual and sleep disorders
- Dysarthria and dysphagia

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 41 ✓ Correct: 6 ✗ Incorrect: 35 Average Score: 14.63



Question 43 of 257

Question Difficulty: Easy

Mr. X was admitted to the ED due to high fever, rash and drowsiness for the past 48 hours. He has no past medical history and had a viral upper respiratory tract infection last week.

Examination shows fever of 39°C. There is neck stiffness and purpuric non-blanching rash over his body most notable on the trunk. CSF examination shows:

Appearance	Cloudy
CSF Glucose	1.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	2.2 g/l
CSF WBCs	900 / mm³ (90% polymorphs)

What is the most likely infective agent?

○ **Haemophilus influenzae meningitis**

○ **Meningococcal meningitis**

○ **Listeria monocytogenes**

● **Streptococcus pneumonia meningitis**

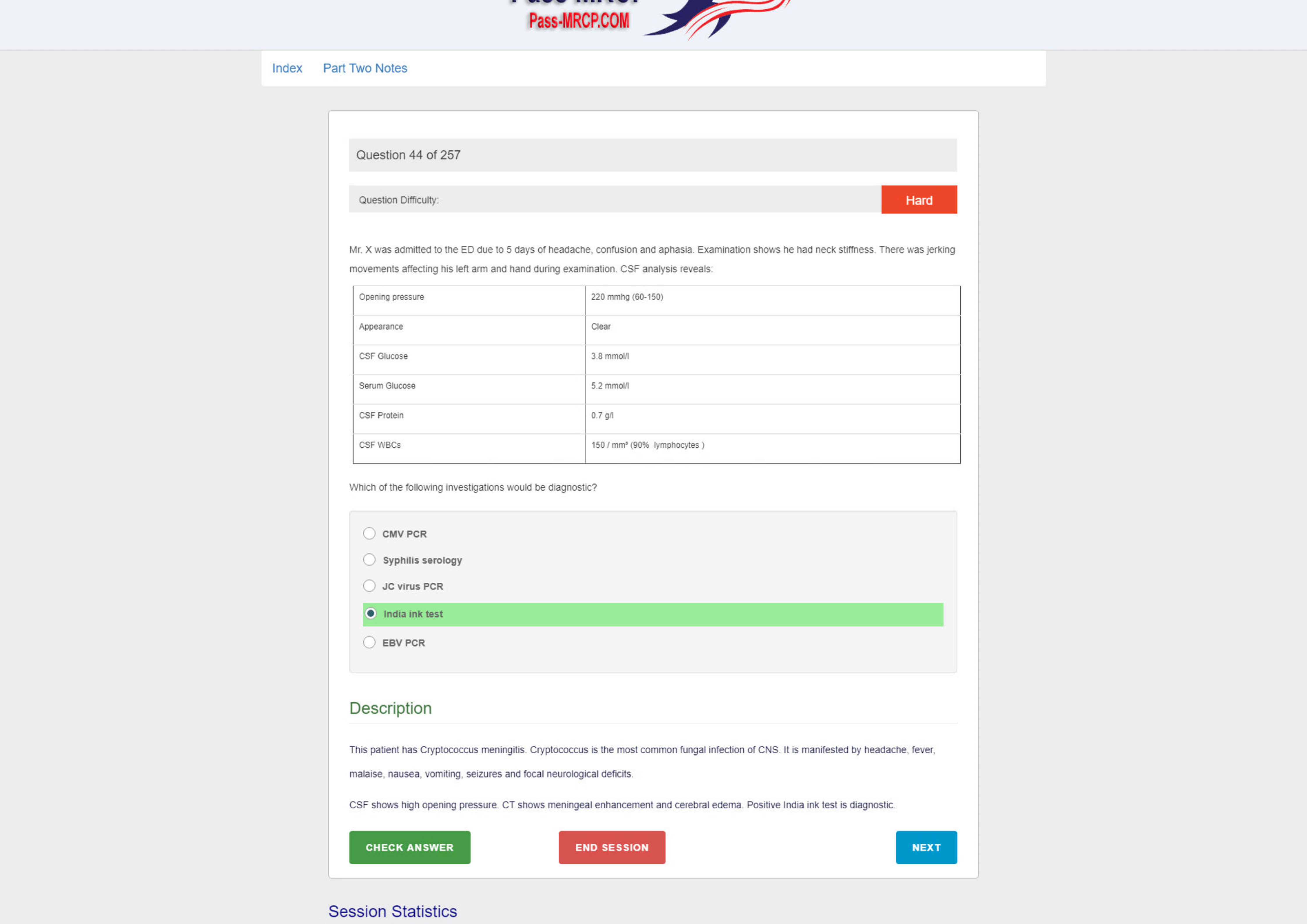
○ **E. coli meningitis**

Description

The CSF picture indicates bacterial meningitis which is:

- Cloudy appearance
- Low glucose (< 1/2 plasma)
- High protein (> 1 g/l)
- White cells 10-5,000 usually polymorphs

Neisseria meningitidis and Streptococcus pneumoniae account for 80% of cases. Purpuric non-blanching rash is a common manifestation of Neisseria meningitides.



Question 44 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to 5 days of headache, confusion and aphasia. Examination shows he had neck stiffness. There was jerking movements affecting his left arm and hand during examination. CSF analysis reveals:

Opening pressure	220 mmhg (60-150)
Appearance	Clear
CSF Glucose	3.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	150 / mm³ (90% lymphocytes)

Which of the following investigations would be diagnostic?

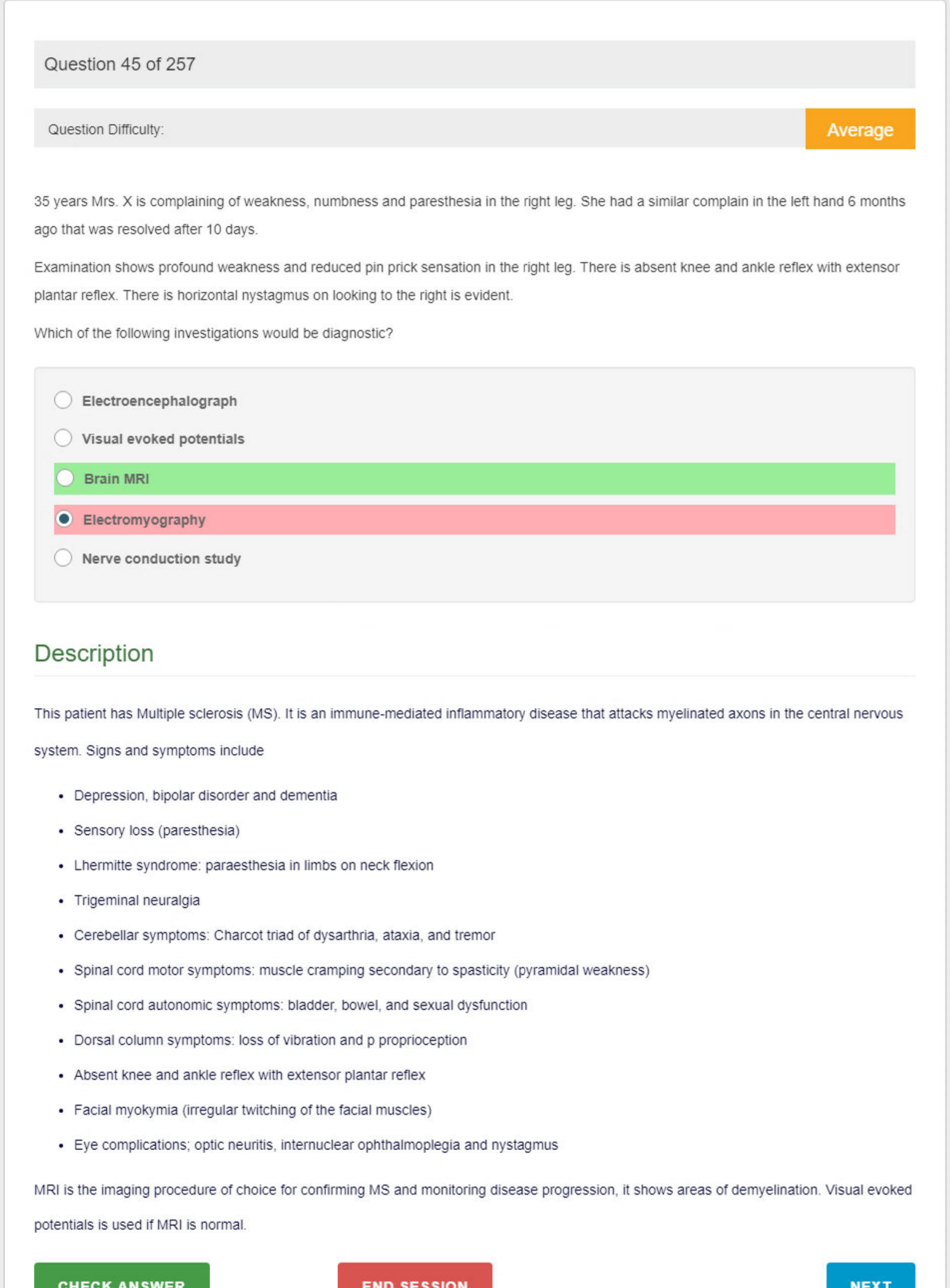
- ○ **CMV PCR**
- ○ **Syphilis serology**
- ○ **JC virus PCR**
- ● **India ink test**
- ○ **EBV PCR**

Description

This patient has Cryptococcus meningitis. Cryptococcus is the most common fungal infection of CNS. It is manifested by headache, fever, malaise, nausea, vomiting, seizures and focal neurological deficits.

CSF shows high opening pressure. CT shows meningeal enhancement and cerebral edema. Positive India ink test is diagnostic.

Session Statistics



Question 45 of 257

Question Difficulty: **Average**

35 years Mrs. X is complaining of weakness, numbness and paresthesia in the right leg. She had a similar complain in the left hand 6 months ago that was resolved after 10 days.

Examination shows profound weakness and reduced pin prick sensation in the right leg. There is absent knee and ankle reflex with extensor plantar reflex. There is horizontal nystagmus on looking to the right is evident.

Which of the following investigations would be diagnostic?

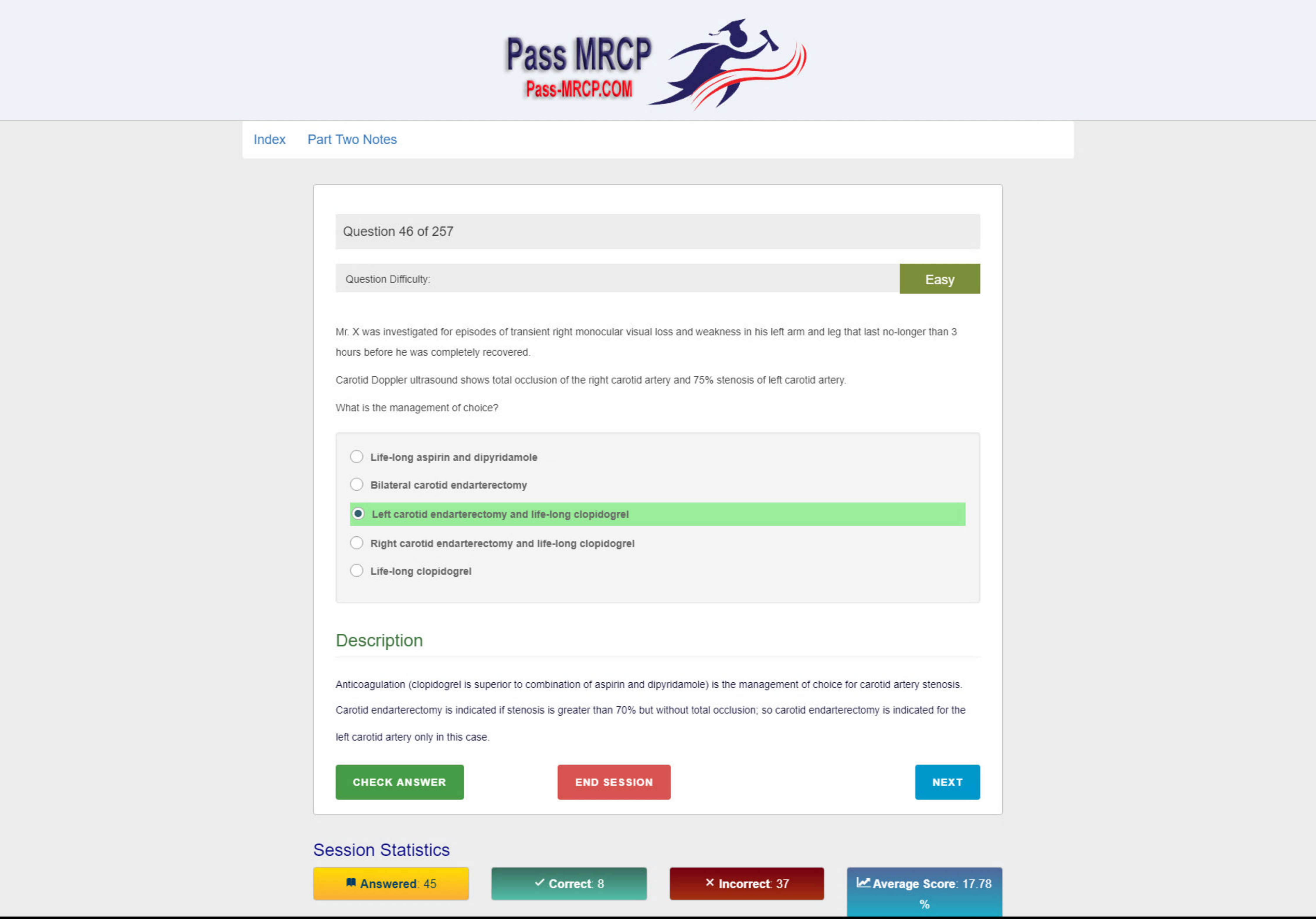
○ **Electroencephalograph**
○ **Visual evoked potentials**
○ **Brain MRI**
● **Electromyography**
○ **Nerve conduction study**

Description

This patient has Multiple sclerosis (MS). It is an immune-mediated inflammatory disease that attacks myelinated axons in the central nervous system. Signs and symptoms include

- Depression, bipolar disorder and dementia
- Sensory loss (paresthesia)
- Lhermitte syndrome: paraesthesia in limbs on neck flexion
- Trigeminal neuralgia
- Cerebellar symptoms: Charcot triad of dysarthria, ataxia, and tremor
- Spinal cord motor symptoms: muscle cramping secondary to spasticity (pyramidal weakness)
- Spinal cord autonomic symptoms: bladder, bowel, and sexual dysfunction
- Dorsal column symptoms: loss of vibration and p proprioception
- Absent knee and ankle reflex with extensor plantar reflex
- Facial myokymia (irregular twitching of the facial muscles)
- Eye complications; optic neuritis, internuclear ophthalmoplegia and nystagmus

MRI is the imaging procedure of choice for confirming MS and monitoring disease progression, it shows areas of demyelination. Visual evoked potentials is used if MRI is normal.



Question 46 of 257

Question Difficulty: Easy

Mr. X was investigated for episodes of transient right monocular visual loss and weakness in his left arm and leg that last no-longer than 3 hours before he was completely recovered.

Carotid Doppler ultrasound shows total occlusion of the right carotid artery and 75% stenosis of left carotid artery.

What is the management of choice?

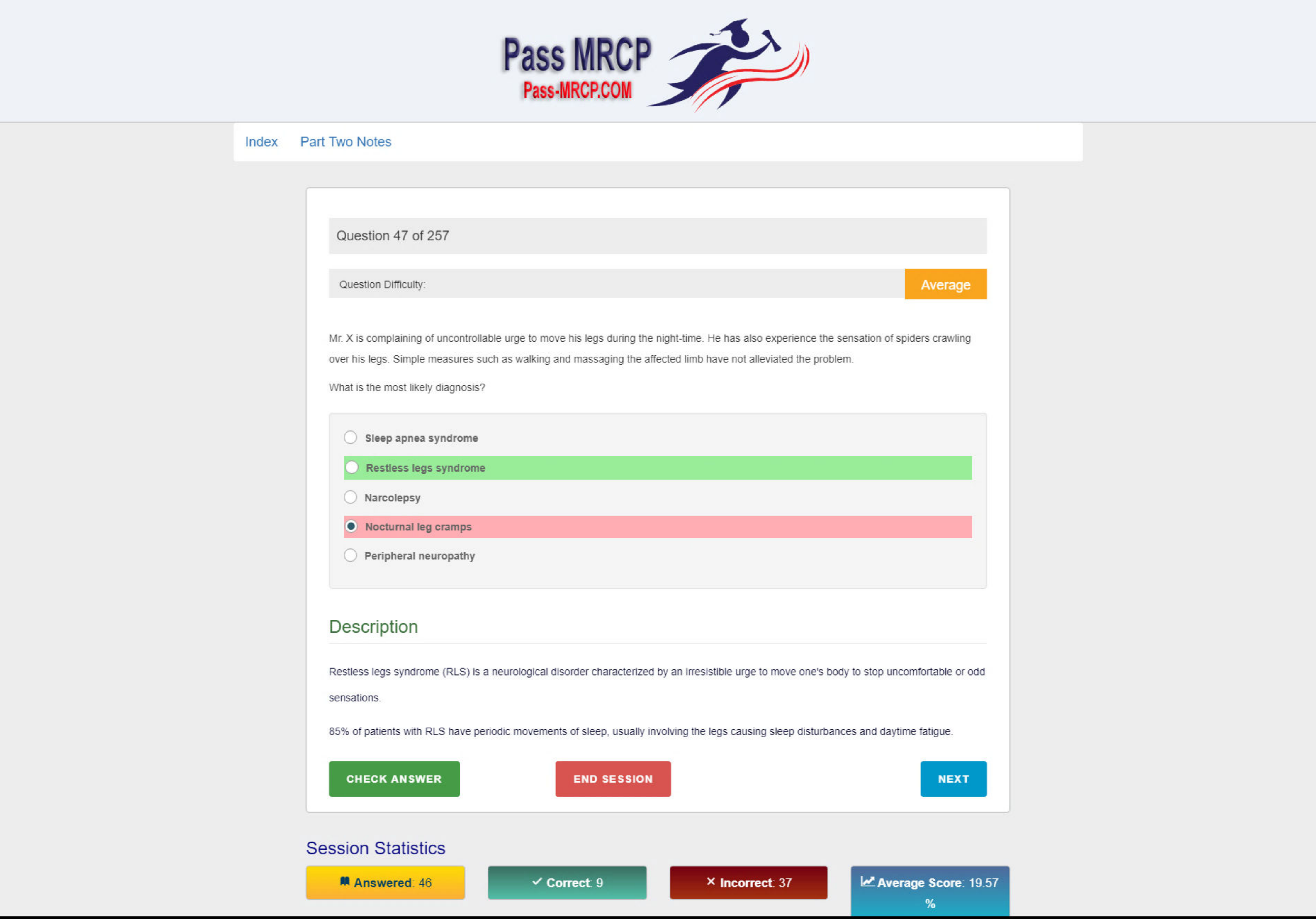
- ○ **Life-long aspirin and dipyridamole**
- ○ **Bilateral carotid endarterectomy**
- ● **Left carotid endarterectomy and life-long clopidogrel**
- ○ **Right carotid endarterectomy and life-long clopidogrel**
- ○ **Life-long clopidogrel**

Description

Anticoagulation (clopidogrel is superior to combination of aspirin and dipyridamole) is the management of choice for carotid artery stenosis. Carotid endarterectomy is indicated if stenosis is greater than 70% but without total occlusion; so carotid endarterectomy is indicated for the left carotid artery only in this case.

Session Statistics

Answered: 45
✓ **Correct**: 8
× **Incorrect**: 37
Average Score: 17.78 %



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Question Difficulty: Average

Mr. X is complaining of uncontrollable urge to move his legs during the night-time. He has also experience the sensation of spiders crawling over his legs. Simple measures such as walking and massaging the affected limb have not alleviated the problem.

What is the most likely diagnosis?

- ○ Sleep apnea syndrome
- ○ Restless legs syndrome
- ○ Narcolepsy
- ● Nocturnal leg cramps
- ○ Peripheral neuropathy

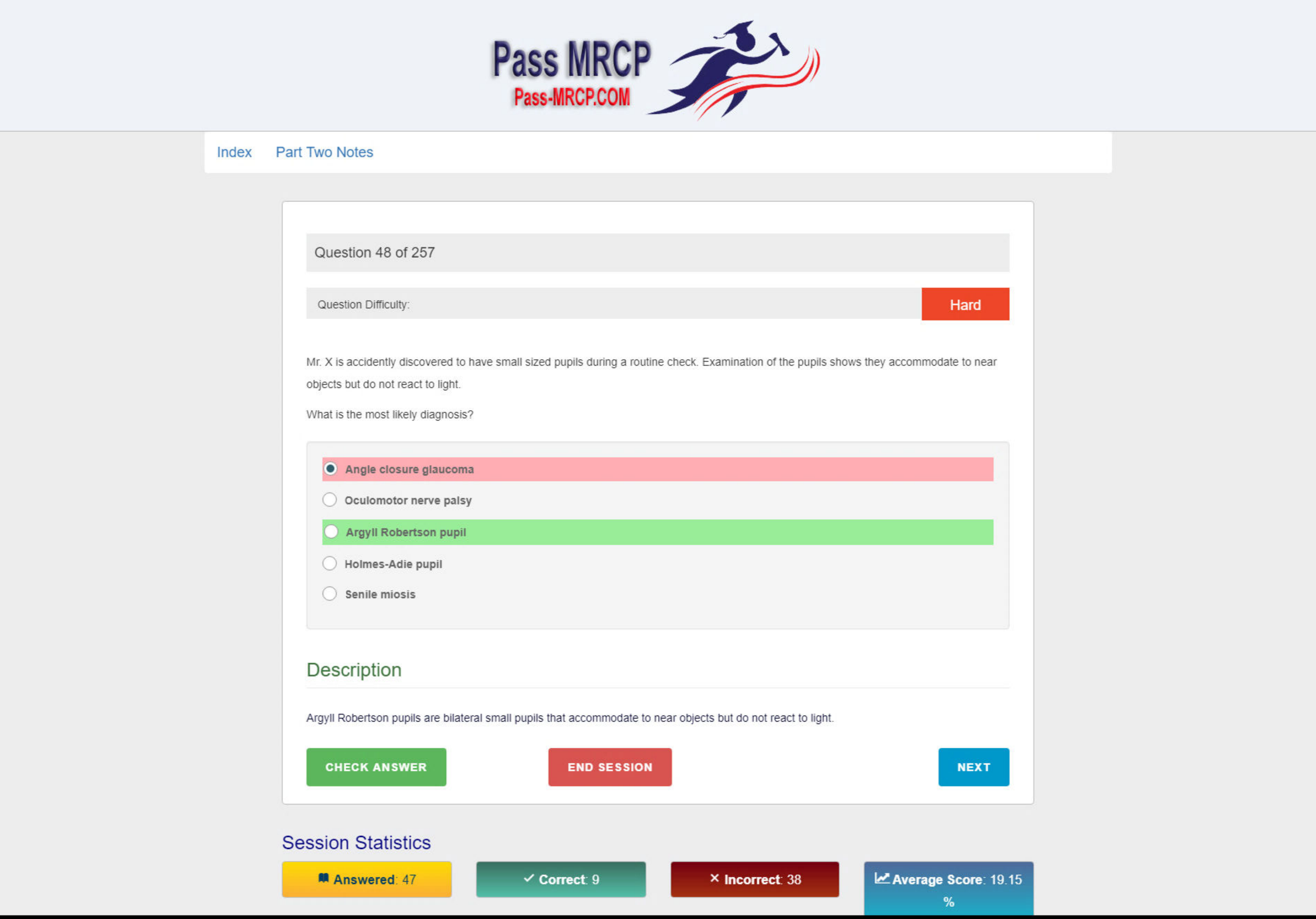
Description

Restless legs syndrome (RLS) is a neurological disorder characterized by an irresistible urge to move one's body to stop uncomfortable or odd sensations.

85% of patients with RLS have periodic movements of sleep, usually involving the legs causing sleep disturbances and daytime fatigue.

Session Statistics

Answered: 46
✓ Correct: 9
✕ Incorrect: 37
Average Score: 19.57 %



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Part Two Notes

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Question Difficulty: Hard

Mr. X is accidently discovered to have small sized pupils during a routine check. Examination of the pupils shows they accommodate to near objects but do not react to light.

What is the most likely diagnosis?

- ● Angle closure glaucoma
- ○ Oculomotor nerve palsy
- ○ Argyll Robertson pupil
- ○ Holmes-Adie pupil
- ○ Senile miosis

Description

Argyll Robertson pupils are bilateral small pupils that accommodate to near objects but do not react to light.

CHECK ANSWER
END SESSION
NEXT

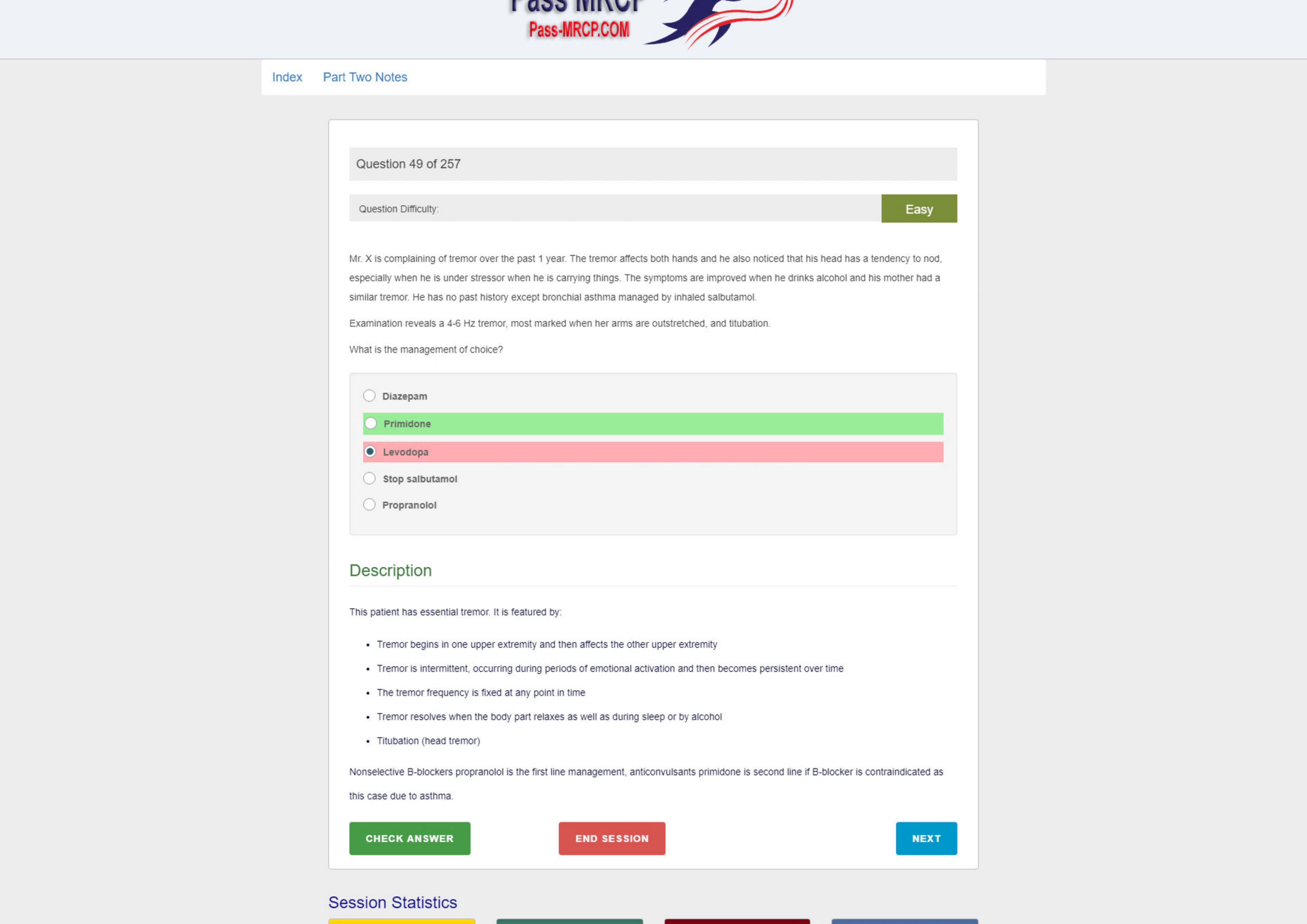
Session Statistics

Answered: 47

✓ **Correct**: 9

× **Incorrect**: 38

Average Score: 19.15 %



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Question Difficulty: Easy

Mr. X is complaining of tremor over the past 1 year. The tremor affects both hands and he also noticed that his head has a tendency to nod, especially when he is under stressor when he is carrying things. The symptoms are improved when he drinks alcohol and his mother had a similar tremor. He has no past history except bronchial asthma managed by inhaled salbutamol.

Examination reveals a 4-6 Hz tremor, most marked when her arms are outstretched, and titubation.

What is the management of choice?

○ **Diazepam**
○ **Primidone**
● **Levodopa**
○ **Stop salbutamol**
○ **Propranolol**

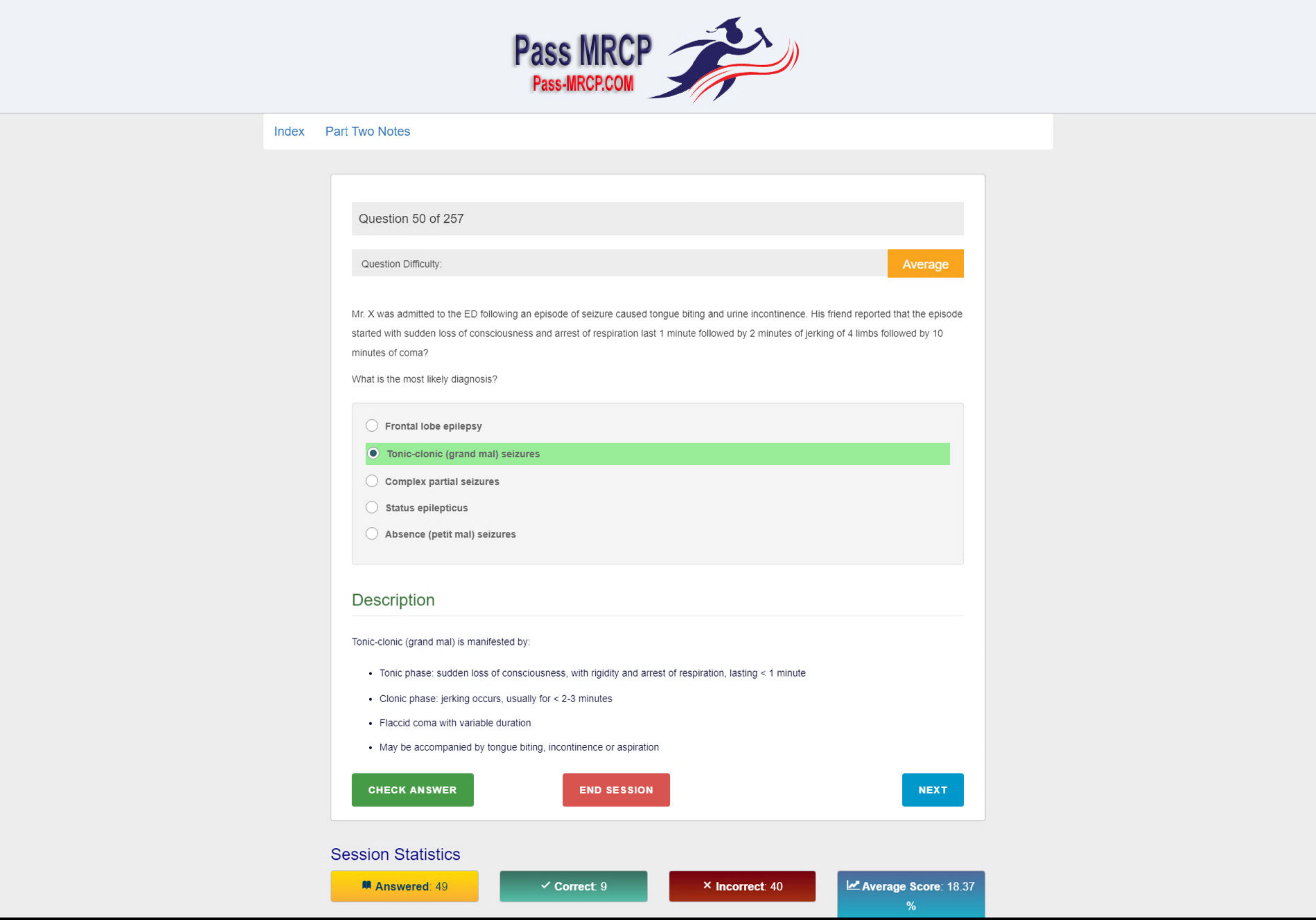
Description

This patient has essential tremor. It is featured by:

- Tremor begins in one upper extremity and then affects the other upper extremity
- Tremor is intermittent, occurring during periods of emotional activation and then becomes persistent over time
- The tremor frequency is fixed at any point in time
- Tremor resolves when the body part relaxes as well as during sleep or by alcohol
- Titubation (head tremor)

Nonselective B-blockers propranolol is the first line management, anticonvulsants primidone is second line if B-blocker is contraindicated as this case due to asthma.

Session Statistics



Question 50 of 257

Question Difficulty: Average

Mr. X was admitted to the ED following an episode of seizure caused tongue biting and urine incontinence. His friend reported that the episode started with sudden loss of consciousness and arrest of respiration last 1 minute followed by 2 minutes of jerking of 4 limbs followed by 10 minutes of coma?

What is the most likely diagnosis?

○ Frontal lobe epilepsy
● Tonic-clonic (grand mal) seizures
○ Complex partial seizures
○ Status epilepticus
○ Absence (petit mal) seizures

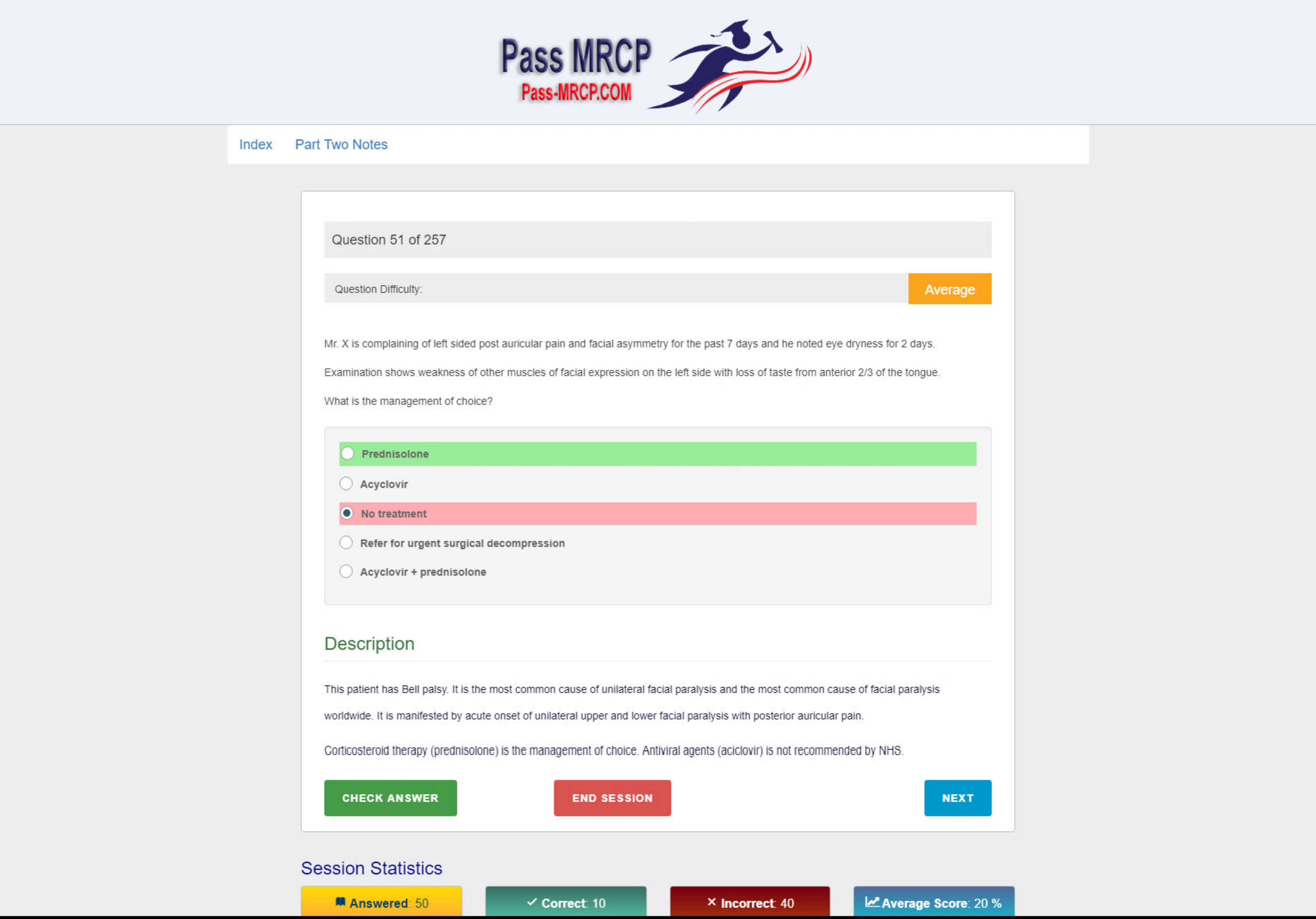
Description

Tonic-clonic (grand mal) is manifested by:

- Tonic phase: sudden loss of consciousness, with rigidity and arrest of respiration, lasting < 1 minute
- Clonic phase: jerking occurs, usually for < 2-3 minutes
- Flaccid coma with variable duration
- May be accompanied by tongue biting, incontinence or aspiration

Session Statistics

Answered: 49
Correct: 9
Incorrect: 40
Average Score: 18.37 %



Question 51 of 257

Question Difficulty: Average

Mr. X is complaining of left sided post auricular pain and facial asymmetry for the past 7 days and he noted eye dryness for 2 days.

Examination shows weakness of other muscles of facial expression on the left side with loss of taste from anterior 2/3 of the tongue.

What is the management of choice?

○ Prednisolone

○ Acyclovir

● No treatment

○ Refer for urgent surgical decompression

○ Acyclovir + prednisolone

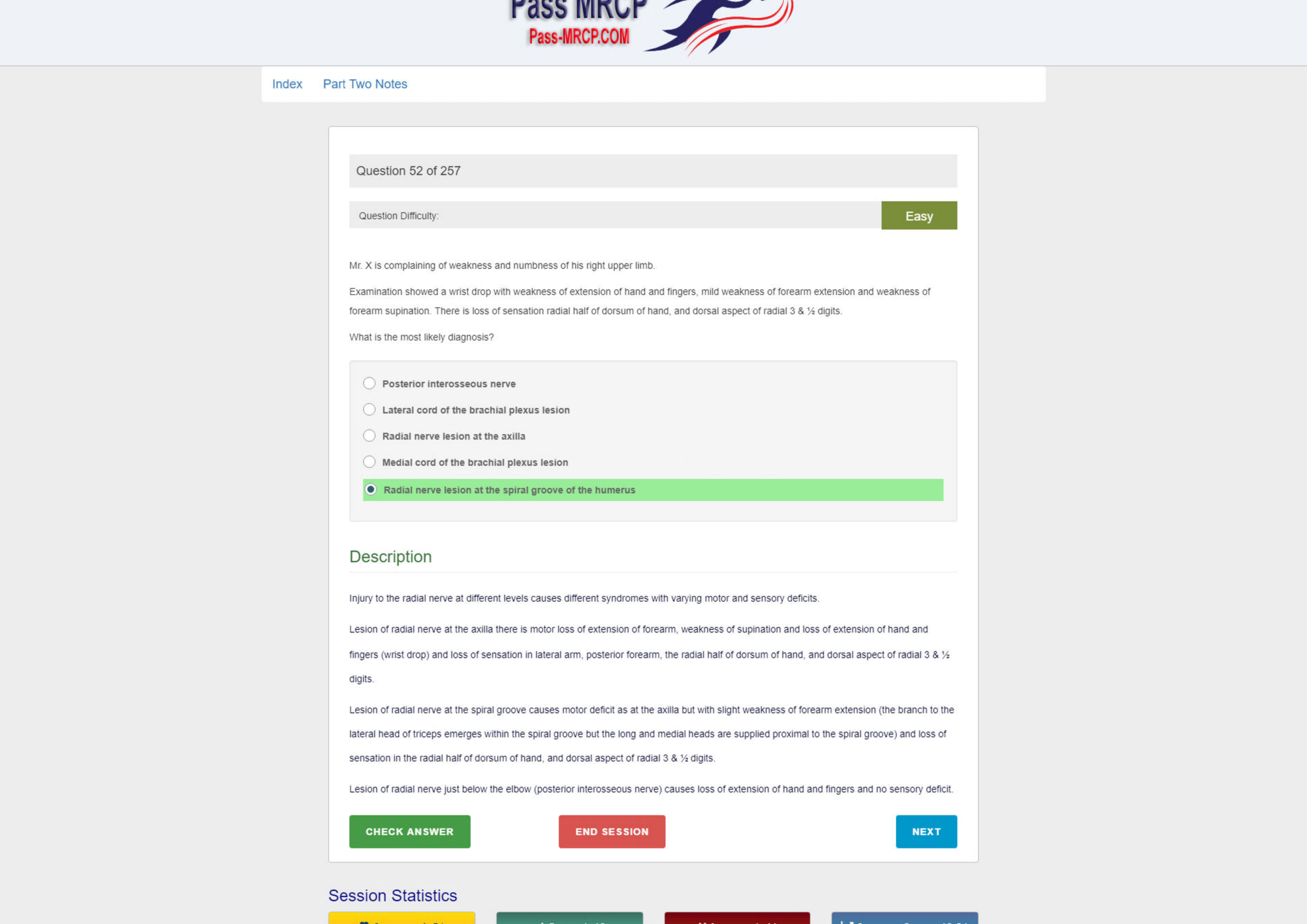
Description

This patient has Bell palsy. It is the most common cause of unilateral facial paralysis and the most common cause of facial paralysis worldwide. It is manifested by acute onset of unilateral upper and lower facial paralysis with posterior auricular pain.

Corticosteroid therapy (prednisolone) is the management of choice. Antiviral agents (aciclovir) is not recommended by NHS.

Session Statistics

Answered: 50
✓ Correct: 10
✕ Incorrect: 40
Average Score: 20 %



Question 52 of 257

Question Difficulty: Easy

Mr. X is complaining of weakness and numbness of his right upper limb.

Examination showed a wrist drop with weakness of extension of hand and fingers, mild weakness of forearm extension and weakness of forearm supination. There is loss of sensation radial half of dorsum of hand, and dorsal aspect of radial 3 & ½ digits.

What is the most likely diagnosis?

- ○ **Posterior interosseous nerve**
- ○ **Lateral cord of the brachial plexus lesion**
- ○ **Radial nerve lesion at the axilla**
- ○ **Medial cord of the brachial plexus lesion**
- ● **Radial nerve lesion at the spiral groove of the humerus**

Description

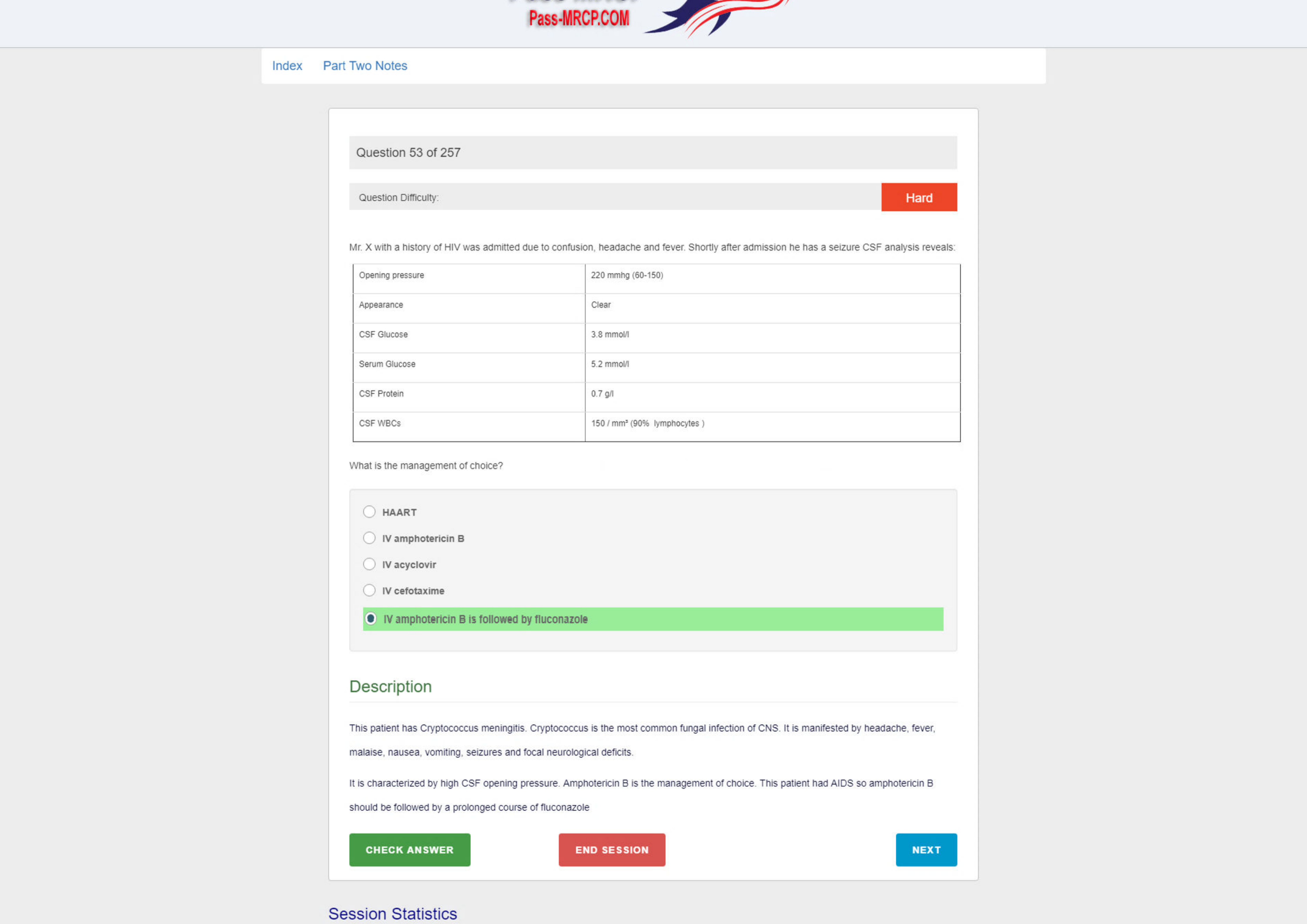
Injury to the radial nerve at different levels causes different syndromes with varying motor and sensory deficits.

Lesion of radial nerve at the axilla there is motor loss of extension of forearm, weakness of supination and loss of extension of hand and fingers (wrist drop) and loss of sensation in lateral arm, posterior forearm, the radial half of dorsum of hand, and dorsal aspect of radial 3 & ½ digits.

Lesion of radial nerve at the spiral groove causes motor deficit as at the axilla but with slight weakness of forearm extension (the branch to the lateral head of triceps emerges within the spiral groove but the long and medial heads are supplied proximal to the spiral groove) and loss of sensation in the radial half of dorsum of hand, and dorsal aspect of radial 3 & ½ digits.

Lesion of radial nerve just below the elbow (posterior interosseous nerve) causes loss of extension of hand and fingers and no sensory deficit.

Session Statistics



Question 53 of 257

Question Difficulty: **Hard**

Mr. X with a history of HIV was admitted due to confusion, headache and fever. Shortly after admission he has a seizure CSF analysis reveals:

Opening pressure	220 mmhg (60-150)
Appearance	Clear
CSF Glucose	3.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	150 / mm³ (90% lymphocytes)

What is the management of choice?

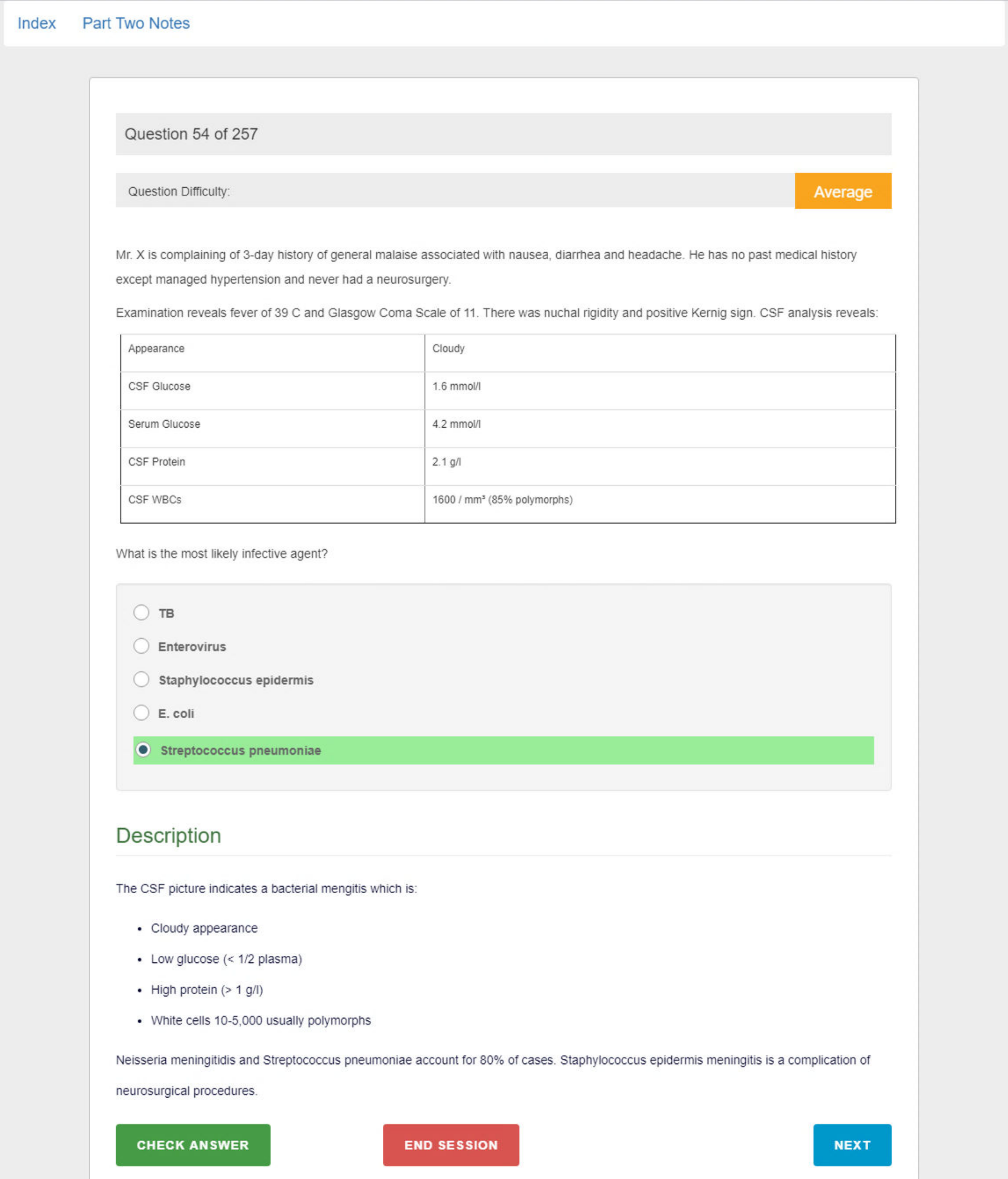
- ○ **HAART**
- ○ **IV amphotericin B**
- ○ **IV acyclovir**
- ○ **IV cefotaxime**
- ● **IV amphotericin B is followed by fluconazole**

Description

This patient has Cryptococcus meningitis. Cryptococcus is the most common fungal infection of CNS. It is manifested by headache, fever, malaise, nausea, vomiting, seizures and focal neurological deficits.

It is characterized by high CSF opening pressure. Amphotericin B is the management of choice. This patient had AIDS so amphotericin B should be followed by a prolonged course of fluconazole

Session Statistics



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Mr. X is complaining of 3-day history of general malaise associated with nausea, diarrhea and headache. He has no past medical history except managed hypertension and never had a neurosurgery.

Examination reveals fever of 39 C and Glasgow Coma Scale of 11. There was nuchal rigidity and positive Kernig sign. CSF analysis reveals:

Appearance	Cloudy
CSF Glucose	1.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	2.1 g/l
CSF WBCs	1600 / mm³ (85% polymorphs)

What is the most likely infective agent?

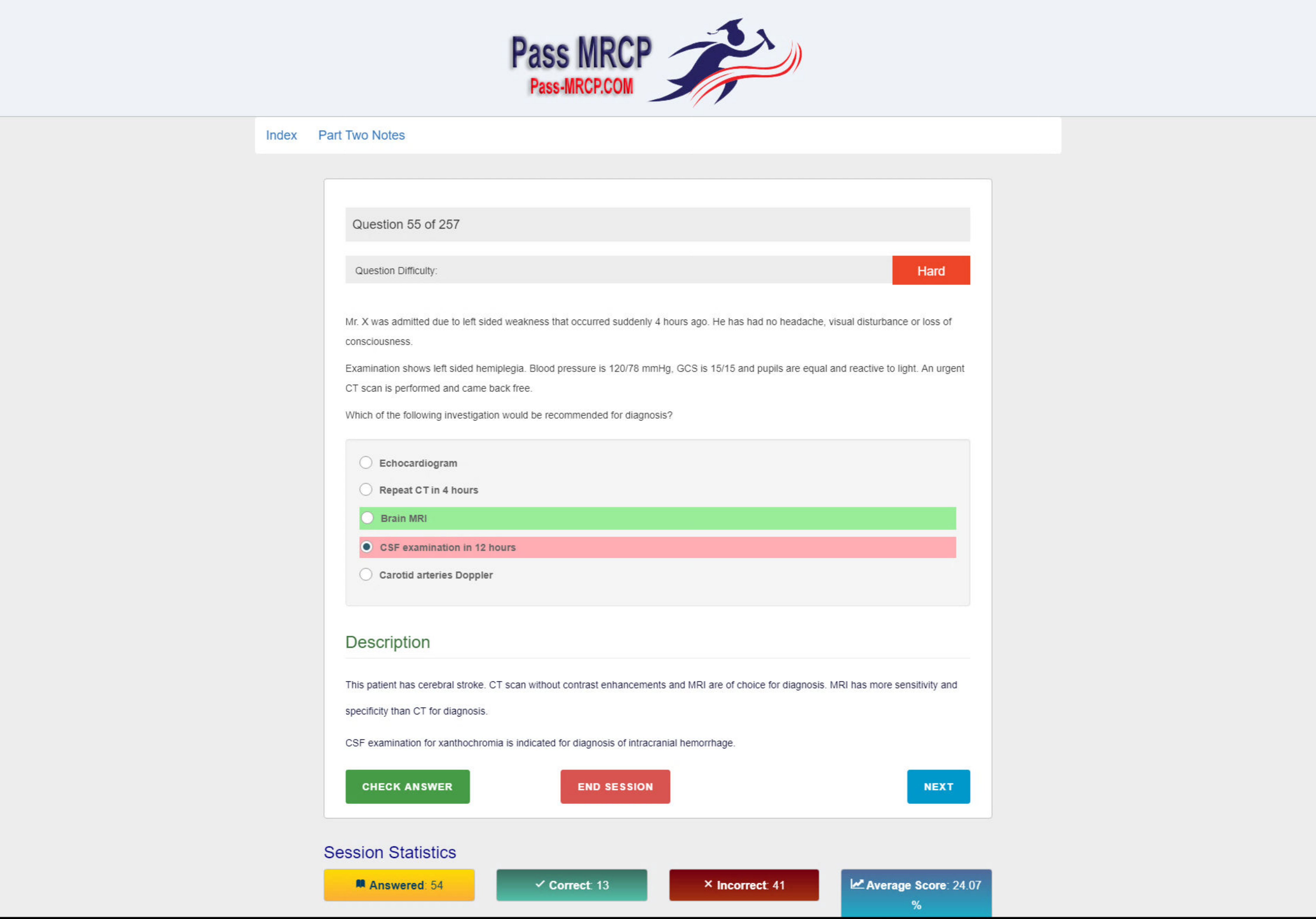
○ **TB**
○ **Enterovirus**
○ **Staphylococcus epidermis**
○ **E. coli**
● **Streptococcus pneumoniae**

Description

The CSF picture indicates a bacterial mengitis which is:

- Cloudy appearance
- Low glucose (< 1/2 plasma)
- High protein (> 1 g/l)
- White cells 10-5,000 usually polymorphs

Neisseria meningitidis and Streptococcus pneumoniae account for 80% of cases. Staphylococcus epidermis meningitis is a complication of neurosurgical procedures.



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Question Difficulty: **Hard**

Mr. X was admitted due to left sided weakness that occurred suddenly 4 hours ago. He has had no headache, visual disturbance or loss of consciousness.

Examination shows left sided hemiplegia. Blood pressure is 120/78 mmHg, GCS is 15/15 and pupils are equal and reactive to light. An urgent CT scan is performed and came back free.

Which of the following investigation would be recommended for diagnosis?

○ **Echocardiogram**
○ **Repeat CT in 4 hours**
○ **Brain MRI**
● **CSF examination in 12 hours**
○ **Carotid arteries Doppler**

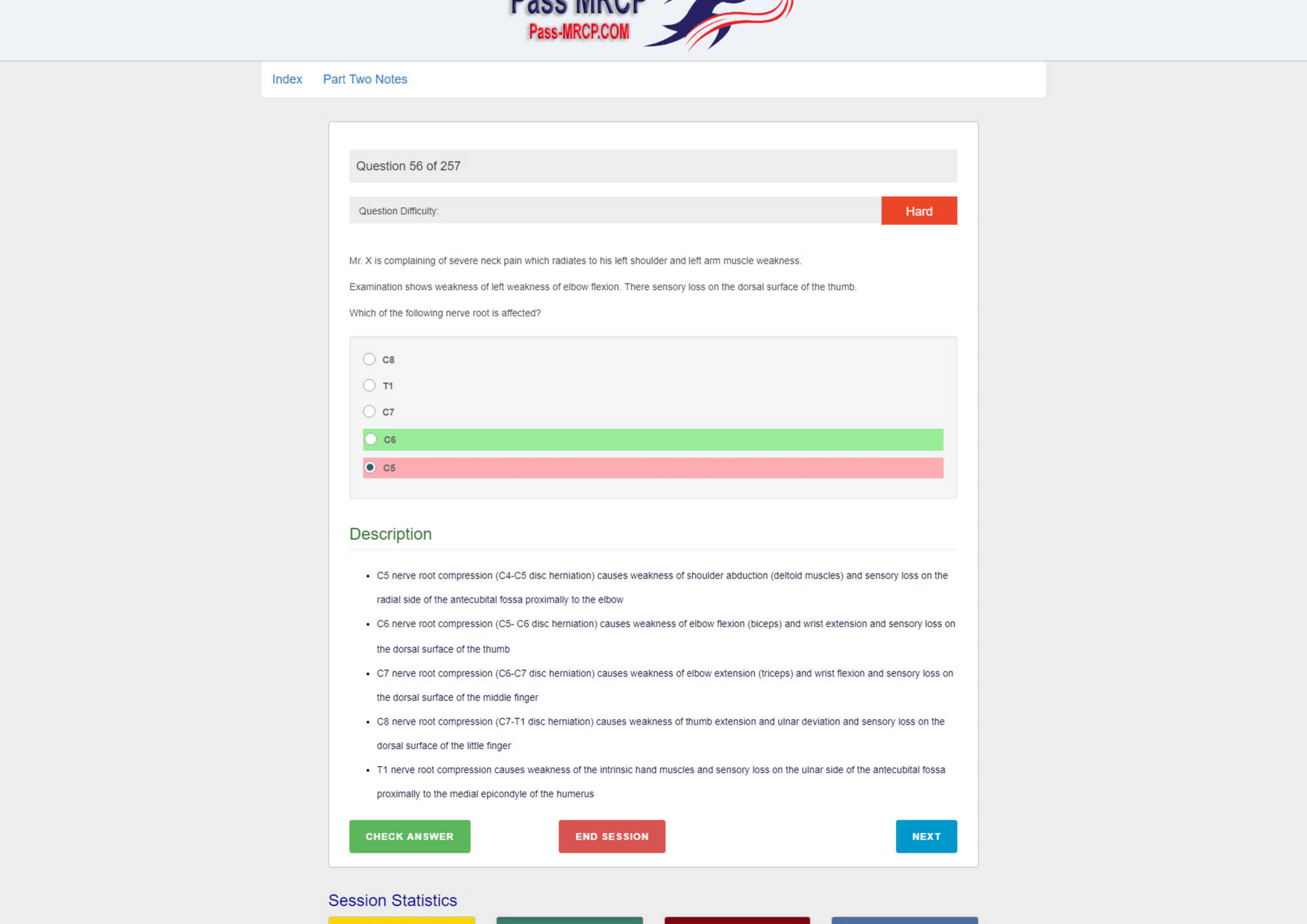
Description

This patient has cerebral stroke. CT scan without contrast enhancements and MRI are of choice for diagnosis. MRI has more sensitivity and specificity than CT for diagnosis.

CSF examination for xanthochromia is indicated for diagnosis of intracranial hemorrhage.

Session Statistics

Answered: 54
✓ **Correct**: 13
✕ **Incorrect**: 41
Average Score: 24.07 %



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Question Difficulty: **Hard**

Mr. X is complaining of severe neck pain which radiates to his left shoulder and left arm muscle weakness.

Examination shows weakness of left weakness of elbow flexion. There sensory loss on the dorsal surface of the thumb.

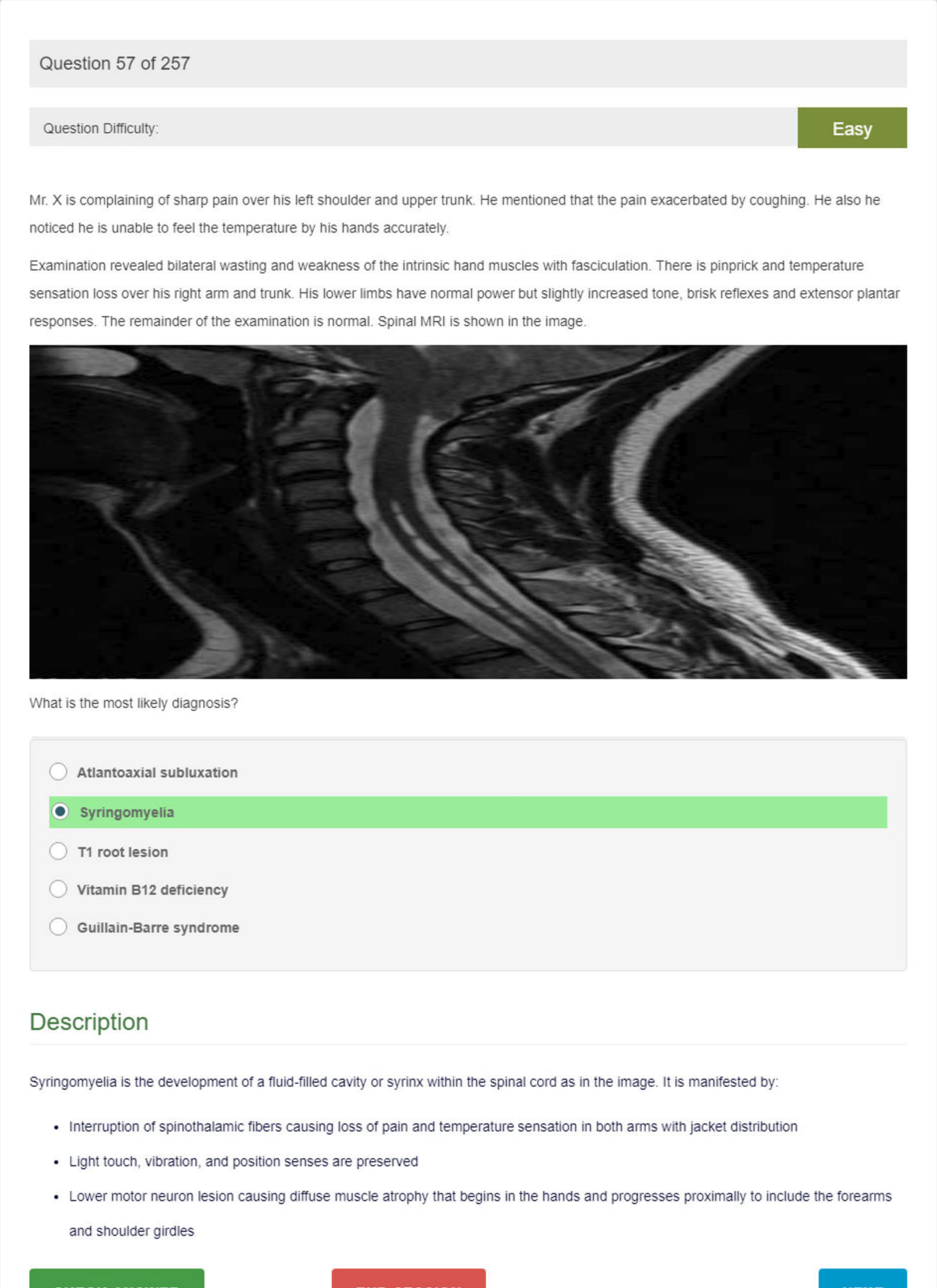
Which of the following nerve root is affected?

○ C8
○ T1
○ C7
○ C6 🟩
● C5 🟥

Description

- C5 nerve root compression (C4-C5 disc herniation) causes weakness of shoulder abduction (deltoid muscles) and sensory loss on the radial side of the antecubital fossa proximally to the elbow
- C6 nerve root compression (C5- C6 disc herniation) causes weakness of elbow flexion (biceps) and wrist extension and sensory loss on the dorsal surface of the thumb
- C7 nerve root compression (C6-C7 disc herniation) causes weakness of elbow extension (triceps) and wrist flexion and sensory loss on the dorsal surface of the middle finger
- C8 nerve root compression (C7-T1 disc herniation) causes weakness of thumb extension and ulnar deviation and sensory loss on the dorsal surface of the little finger
- T1 nerve root compression causes weakness of the intrinsic hand muscles and sensory loss on the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus

Session Statistics



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Question Difficulty: **Easy**

Mr. X is complaining of sharp pain over his left shoulder and upper trunk. He mentioned that the pain exacerbated by coughing. He also he noticed he is unable to feel the temperature by his hands accurately.

Examination revealed bilateral wasting and weakness of the intrinsic hand muscles with fasciculation. There is pinprick and temperature sensation loss over his right arm and trunk. His lower limbs have normal power but slightly increased tone, brisk reflexes and extensor plantar responses. The remainder of the examination is normal. Spinal MRI is shown in the image.

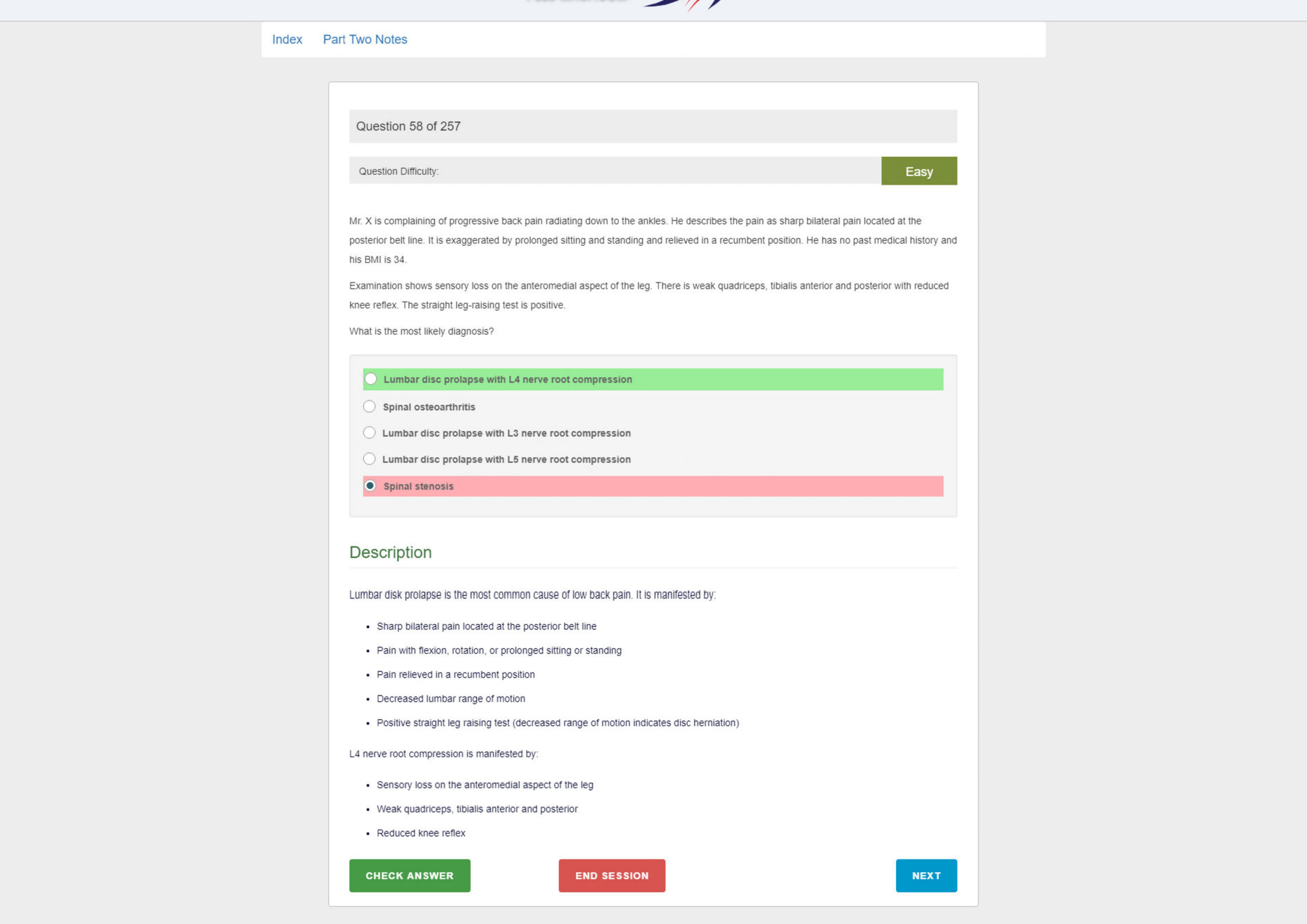
What is the most likely diagnosis?

○ **Atlantoaxial subluxation**
● **Syringomyelia**
○ **T1 root lesion**
○ **Vitamin B12 deficiency**
○ **Guillain-Barre syndrome**

Description

Syringomyelia is the development of a fluid-filled cavity or syrinx within the spinal cord as in the image. It is manifested by:

- Interruption of spinothalamic fibers causing loss of pain and temperature sensation in both arms with jacket distribution
- Light touch, vibration, and position senses are preserved
- Lower motor neuron lesion causing diffuse muscle atrophy that begins in the hands and progresses proximally to include the forearms and shoulder girdles



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Question Difficulty: **Easy**

Mr. X is complaining of progressive back pain radiating down to the ankles. He describes the pain as sharp bilateral pain located at the posterior belt line. It is exaggerated by prolonged sitting and standing and relieved in a recumbent position. He has no past medical history and his BMI is 34.

Examination shows sensory loss on the anteromedial aspect of the leg. There is weak quadriceps, tibialis anterior and posterior with reduced knee reflex. The straight leg-raising test is positive.

What is the most likely diagnosis?

○ **Lumbar disc prolapse with L4 nerve root compression**
○ **Spinal osteoarthritis**
○ **Lumbar disc prolapse with L3 nerve root compression**
○ **Lumbar disc prolapse with L5 nerve root compression**
● **Spinal stenosis**

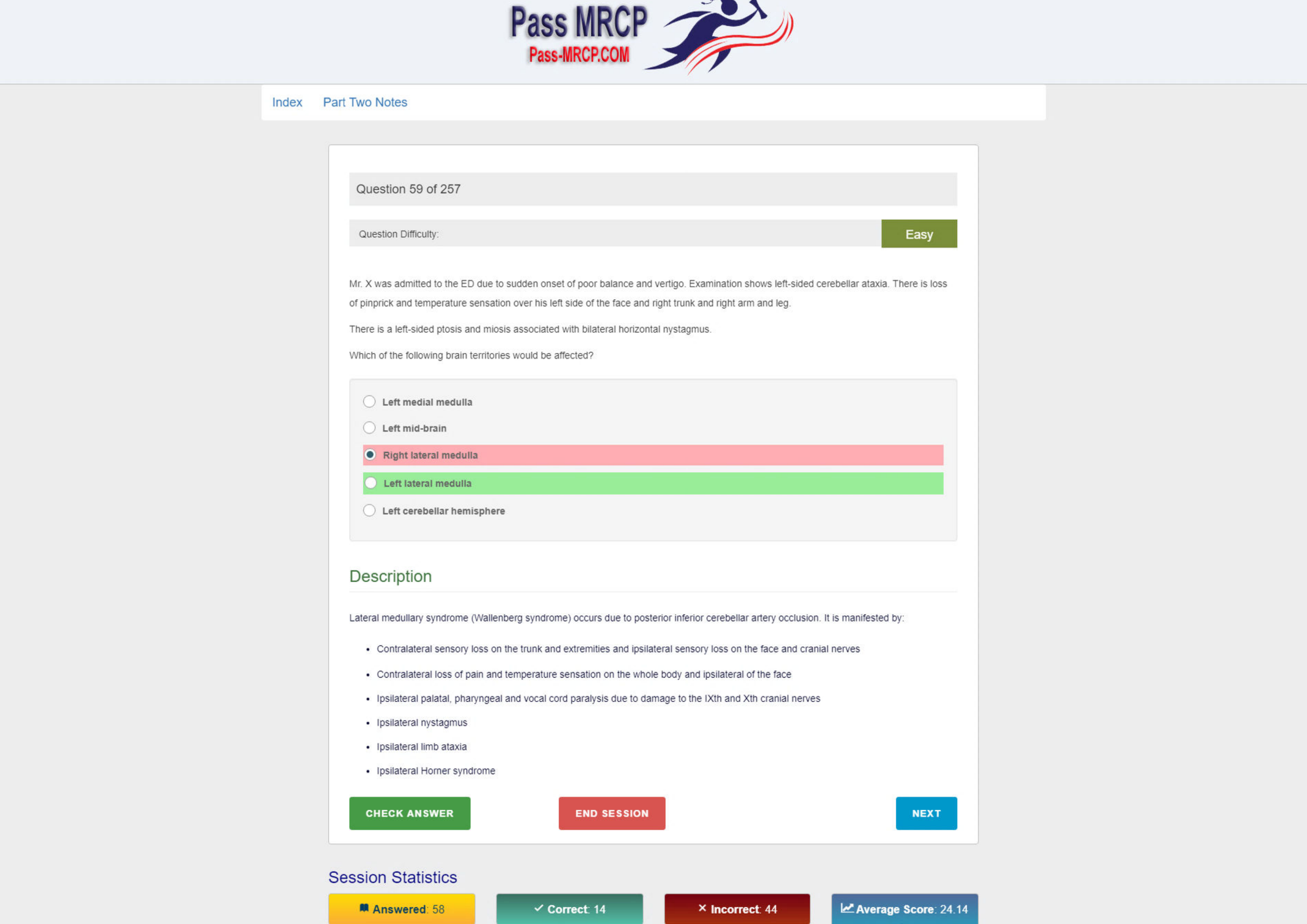
Description

Lumbar disk prolapse is the most common cause of low back pain. It is manifested by:

- Sharp bilateral pain located at the posterior belt line
- Pain with flexion, rotation, or prolonged sitting or standing
- Pain relieved in a recumbent position
- Decreased lumbar range of motion
- Positive straight leg raising test (decreased range of motion indicates disc herniation)

L4 nerve root compression is manifested by:

- Sensory loss on the anteromedial aspect of the leg
- Weak quadriceps, tibialis anterior and posterior
- Reduced knee reflex



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Question Difficulty: Easy

Mr. X was admitted to the ED due to sudden onset of poor balance and vertigo. Examination shows left-sided cerebellar ataxia. There is loss of pinprick and temperature sensation over his left side of the face and right trunk and right arm and leg.

There is a left-sided ptosis and miosis associated with bilateral horizontal nystagmus.

Which of the following brain territories would be affected?

○ Left medial medulla
○ Left mid-brain
● Right lateral medulla
○ Left lateral medulla
○ Left cerebellar hemisphere

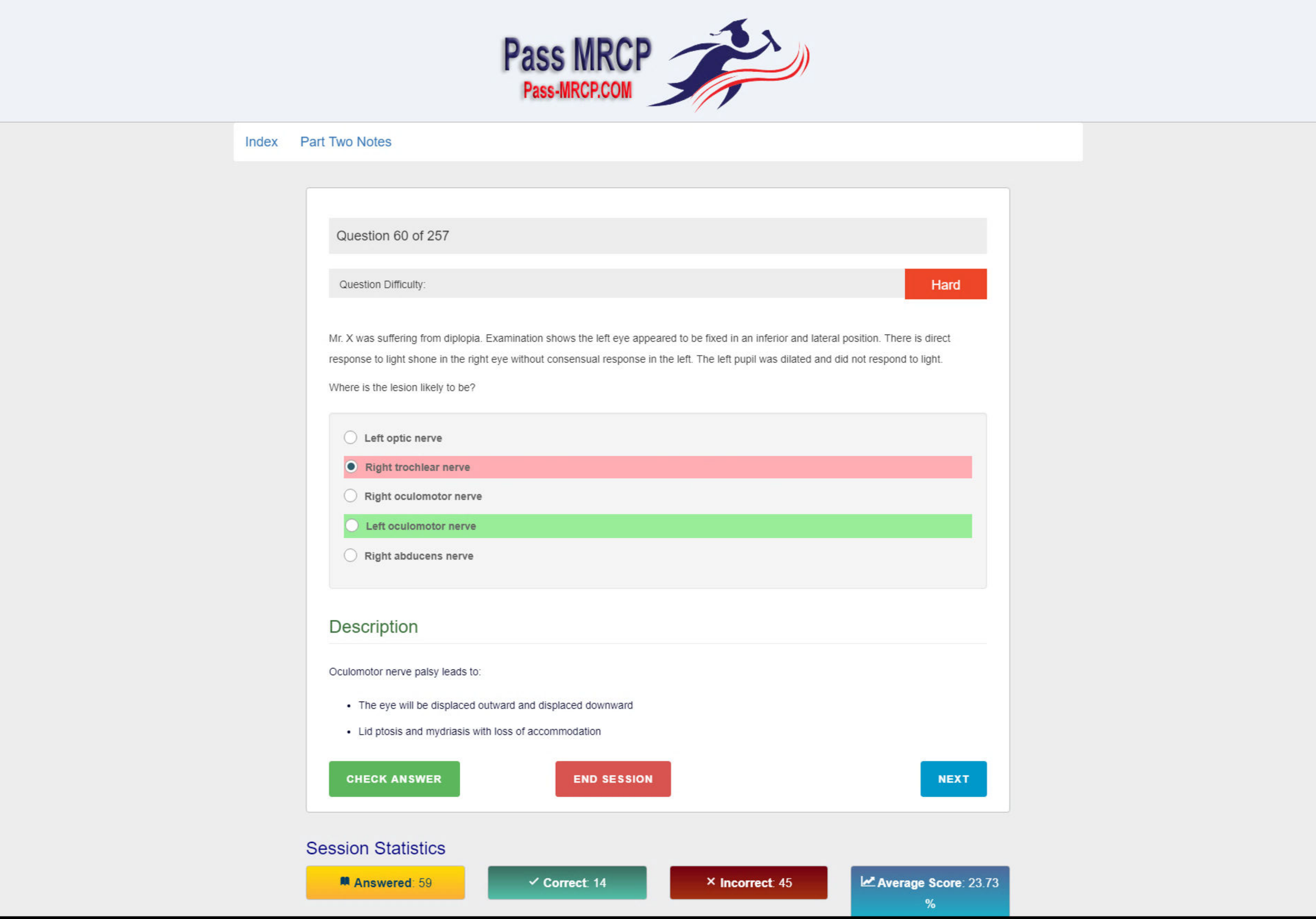
Description

Lateral medullary syndrome (Wallenberg syndrome) occurs due to posterior inferior cerebellar artery occlusion. It is manifested by:

- Contralateral sensory loss on the trunk and extremities and ipsilateral sensory loss on the face and cranial nerves
- Contralateral loss of pain and temperature sensation on the whole body and ipsilateral of the face
- Ipsilateral palatal, pharyngeal and vocal cord paralysis due to damage to the IXth and Xth cranial nerves
- Ipsilateral nystagmus
- Ipsilateral limb ataxia
- Ipsilateral Horner syndrome

Session Statistics

Answered: 58
✓ Correct: 14
× Incorrect: 44
Average Score: 24.14



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Question Difficulty: Hard

Mr. X was suffering from diplopia. Examination shows the left eye appeared to be fixed in an inferior and lateral position. There is direct response to light shone in the right eye without consensual response in the left. The left pupil was dilated and did not respond to light.

Where is the lesion likely to be?

○ **Left optic nerve**

● **Right trochlear nerve**

○ **Right oculomotor nerve**

○ **Left oculomotor nerve**

○ **Right abducens nerve**

Description

Oculomotor nerve palsy leads to:

- The eye will be displaced outward and displaced downward
- Lid ptosis and mydriasis with loss of accommodation

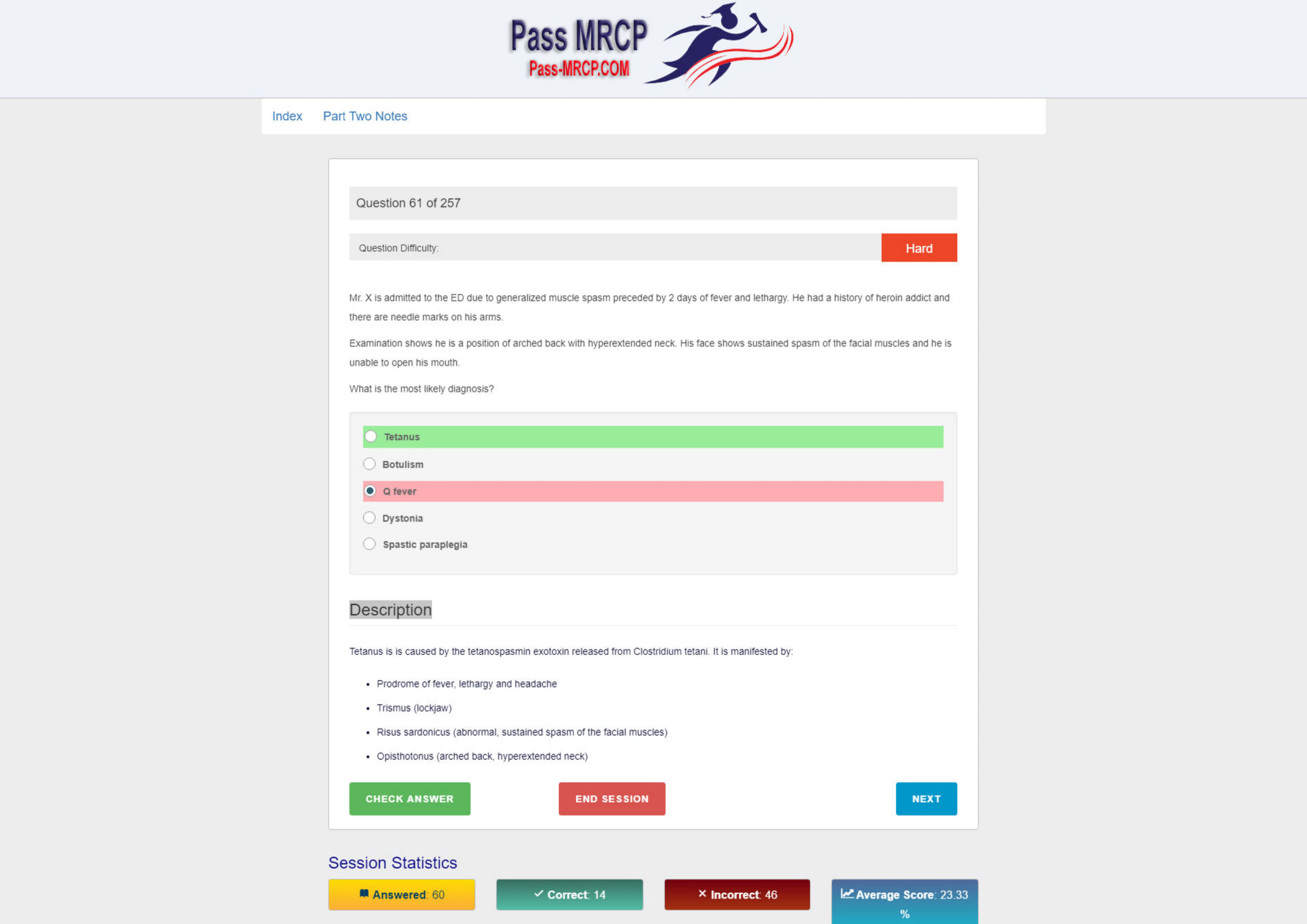
Session Statistics

Answered: 59

✓ **Correct**: 14

× **Incorrect**: 45

Average Score: 23.73 %



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Question Difficulty: Hard

Mr. X is admitted to the ED due to generalized muscle spasm preceded by 2 days of fever and lethargy. He had a history of heroin addict and there are needle marks on his arms.

Examination shows he is a position of arched back with hyperextended neck. His face shows sustained spasm of the facial muscles and he is unable to open his mouth.

What is the most likely diagnosis?

○ **Tetanus**
○ **Botulism**
● **Q fever**
○ **Dystonia**
○ **Spastic paraplegia**

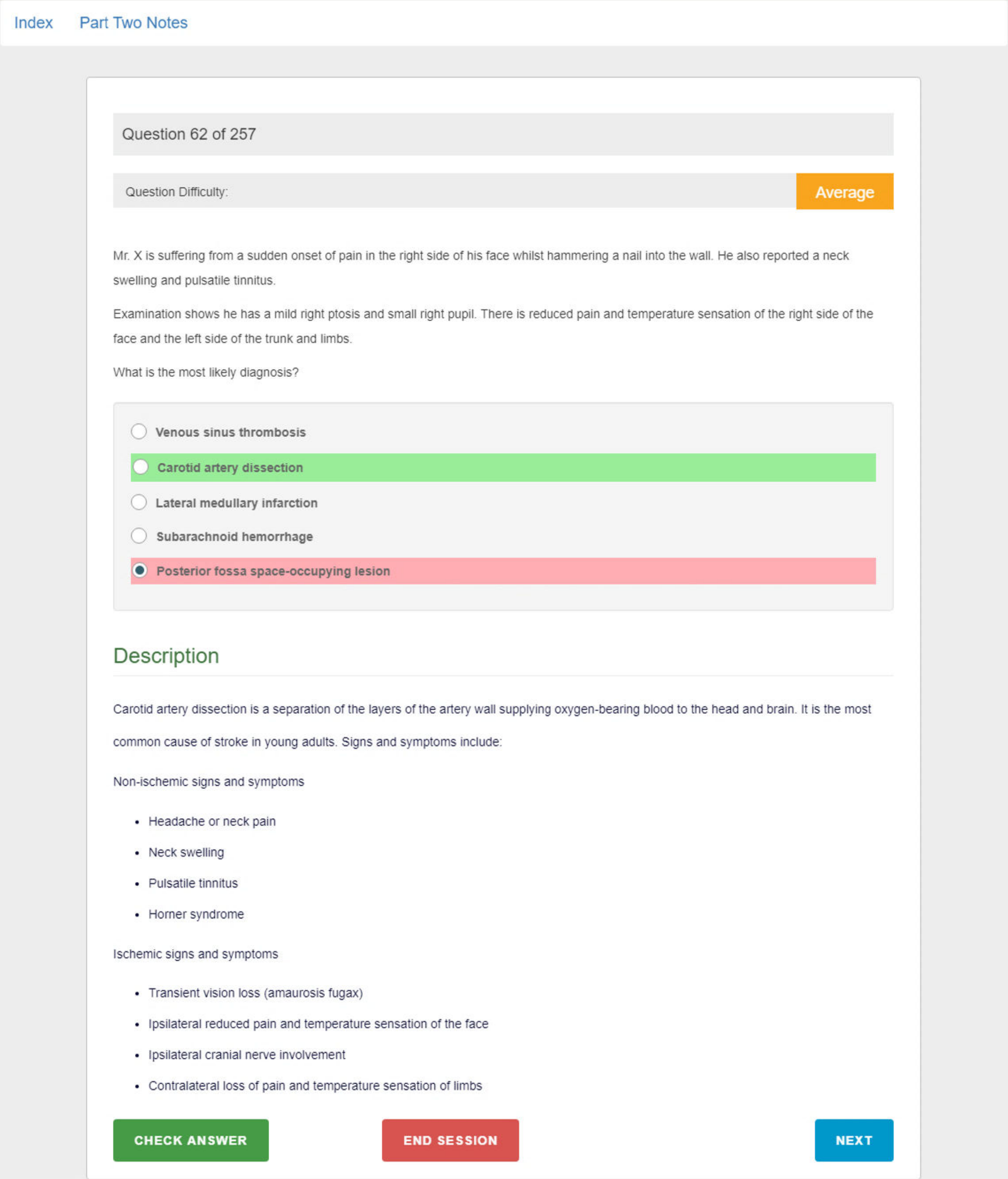
Description

Tetanus is is caused by the tetanospasmin exotoxin released from Clostridium tetani. It is manifested by:

- Prodrome of fever, lethargy and headache
- Trismus (lockjaw)
- Risus sardonicus (abnormal, sustained spasm of the facial muscles)
- Opisthotonus (arched back, hyperextended neck)

Session Statistics

Answered: 60
✓ **Correct**: 14
✕ **Incorrect**: 46
Average Score: 23.33 %



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Question Difficulty: Average

Mr. X is suffering from a sudden onset of pain in the right side of his face whilst hammering a nail into the wall. He also reported a neck swelling and pulsatile tinnitus.

Examination shows he has a mild right ptosis and small right pupil. There is reduced pain and temperature sensation of the right side of the face and the left side of the trunk and limbs.

What is the most likely diagnosis?

○ **Venous sinus thrombosis**
○ **Carotid artery dissection**
○ **Lateral medullary infarction**
○ **Subarachnoid hemorrhage**
● **Posterior fossa space-occupying lesion**

Description

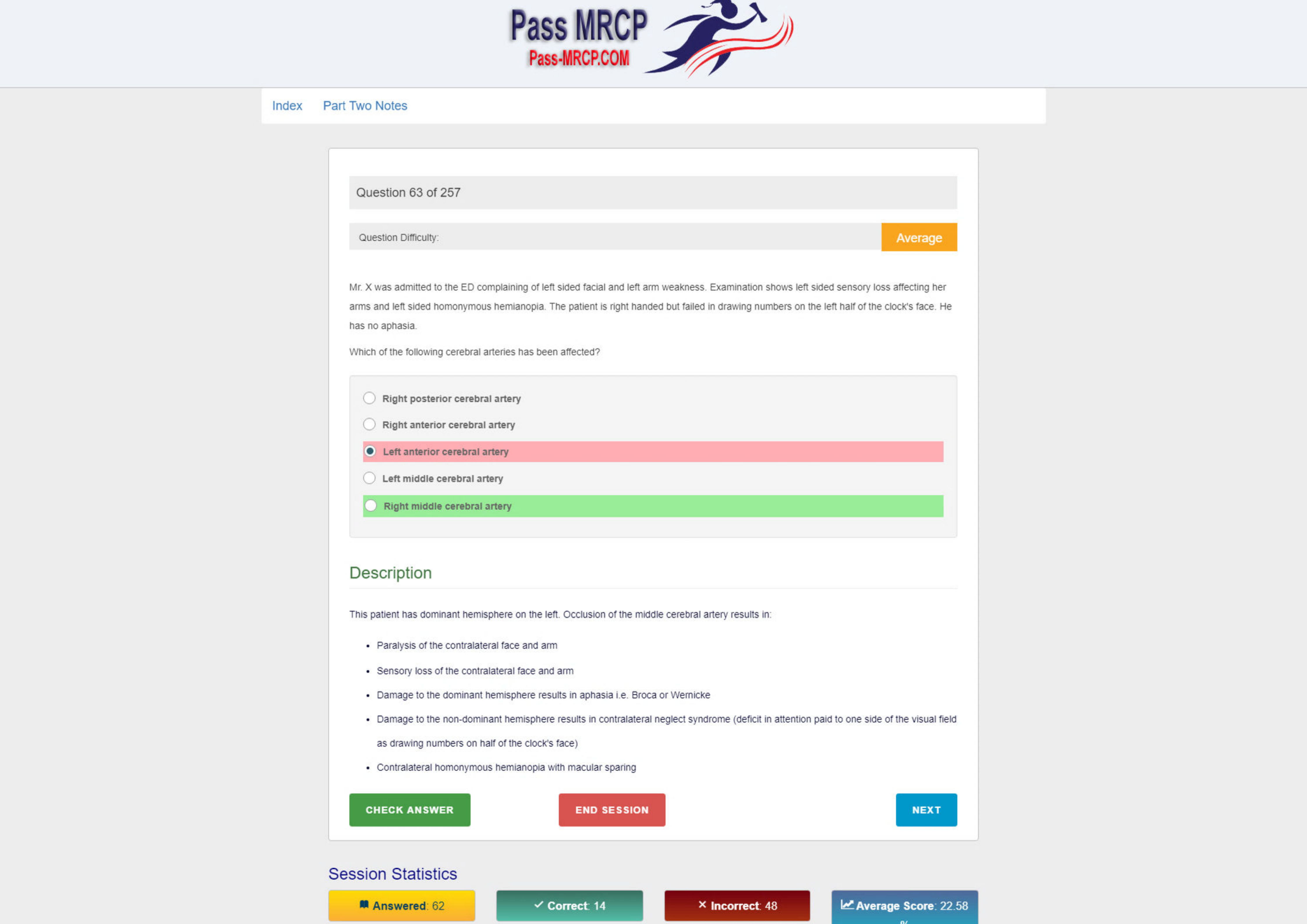
Carotid artery dissection is a separation of the layers of the artery wall supplying oxygen-bearing blood to the head and brain. It is the most common cause of stroke in young adults. Signs and symptoms include:

Non-ischemic signs and symptoms

- Headache or neck pain
- Neck swelling
- Pulsatile tinnitus
- Horner syndrome

Ischemic signs and symptoms

- Transient vision loss (amaurosis fugax)
- Ipsilateral reduced pain and temperature sensation of the face
- Ipsilateral cranial nerve involvement
- Contralateral loss of pain and temperature sensation of limbs



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Question Difficulty: Average

Mr. X was admitted to the ED complaining of left sided facial and left arm weakness. Examination shows left sided sensory loss affecting her arms and left sided homonymous hemianopia. The patient is right handed but failed in drawing numbers on the left half of the clock's face. He has no aphasia.

Which of the following cerebral arteries has been affected?

○ Right posterior cerebral artery
○ Right anterior cerebral artery
● Left anterior cerebral artery
○ Left middle cerebral artery
○ Right middle cerebral artery

Description

This patient has dominant hemisphere on the left. Occlusion of the middle cerebral artery results in:

- Paralysis of the contralateral face and arm
- Sensory loss of the contralateral face and arm
- Damage to the dominant hemisphere results in aphasia i.e. Broca or Wernicke
- Damage to the non-dominant hemisphere results in contralateral neglect syndrome (deficit in attention paid to one side of the visual field as drawing numbers on half of the clock's face)
- Contralateral homonymous hemianopia with macular sparing

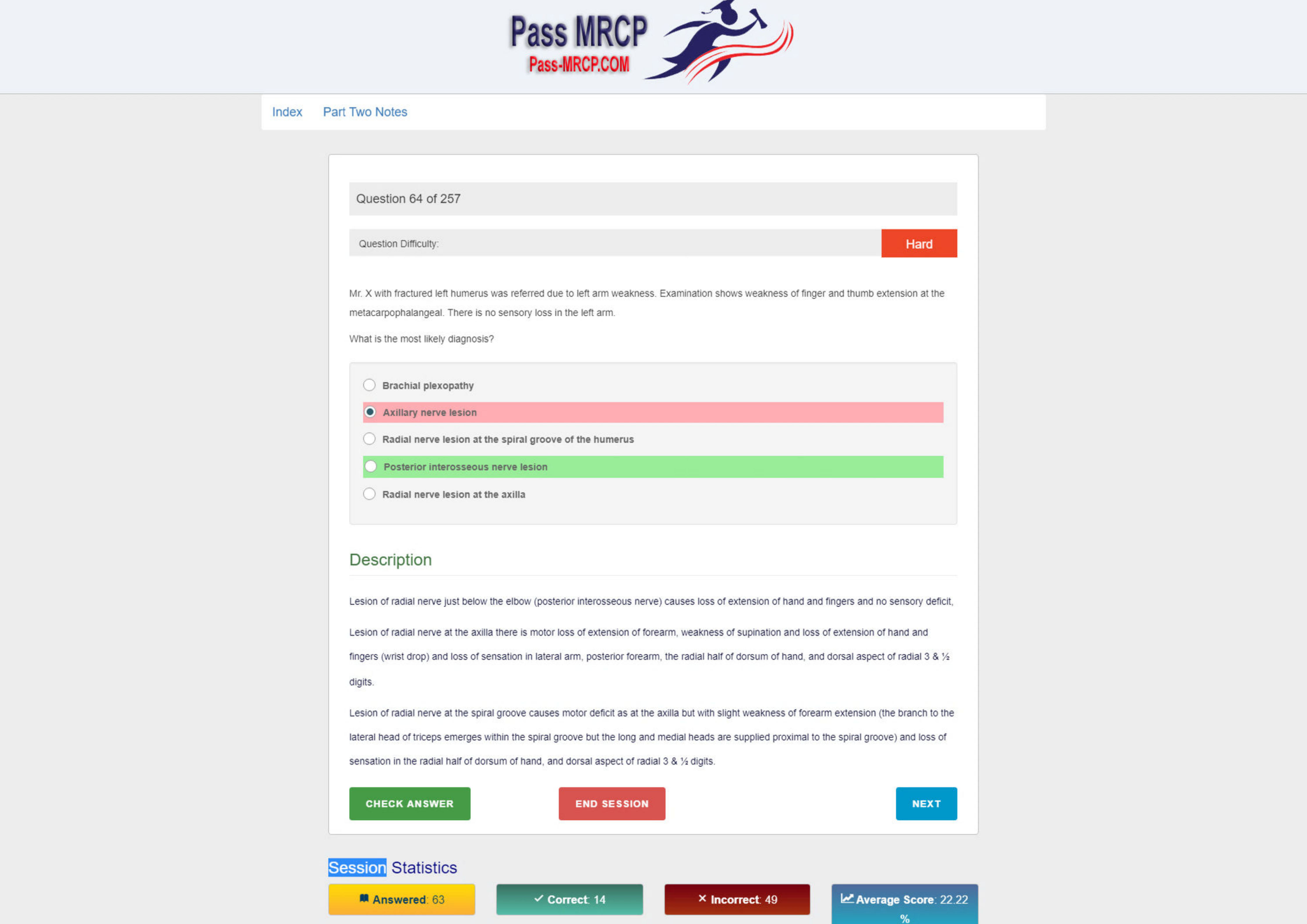
Session Statistics

Answered: 62

✓ Correct: 14

× Incorrect: 48

Average Score: 22.58



Question 64 of 257

Question Difficulty: Hard

Mr. X with fractured left humerus was referred due to left arm weakness. Examination shows weakness of finger and thumb extension at the metacarpophalangeal. There is no sensory loss in the left arm.

What is the most likely diagnosis?

- ○ Brachial plexopathy
- ● Axillary nerve lesion
- ○ Radial nerve lesion at the spiral groove of the humerus
- ○ Posterior interosseous nerve lesion
- ○ Radial nerve lesion at the axilla

Description

Lesion of radial nerve just below the elbow (posterior interosseous nerve) causes loss of extension of hand and fingers and no sensory deficit,

Lesion of radial nerve at the axilla there is motor loss of extension of forearm, weakness of supination and loss of extension of hand and fingers (wrist drop) and loss of sensation in lateral arm, posterior forearm, the radial half of dorsum of hand, and dorsal aspect of radial 3 & ½ digits.

Lesion of radial nerve at the spiral groove causes motor deficit as at the axilla but with slight weakness of forearm extension (the branch to the lateral head of triceps emerges within the spiral groove but the long and medial heads are supplied proximal to the spiral groove) and loss of sensation in the radial half of dorsum of hand, and dorsal aspect of radial 3 & ½ digits.

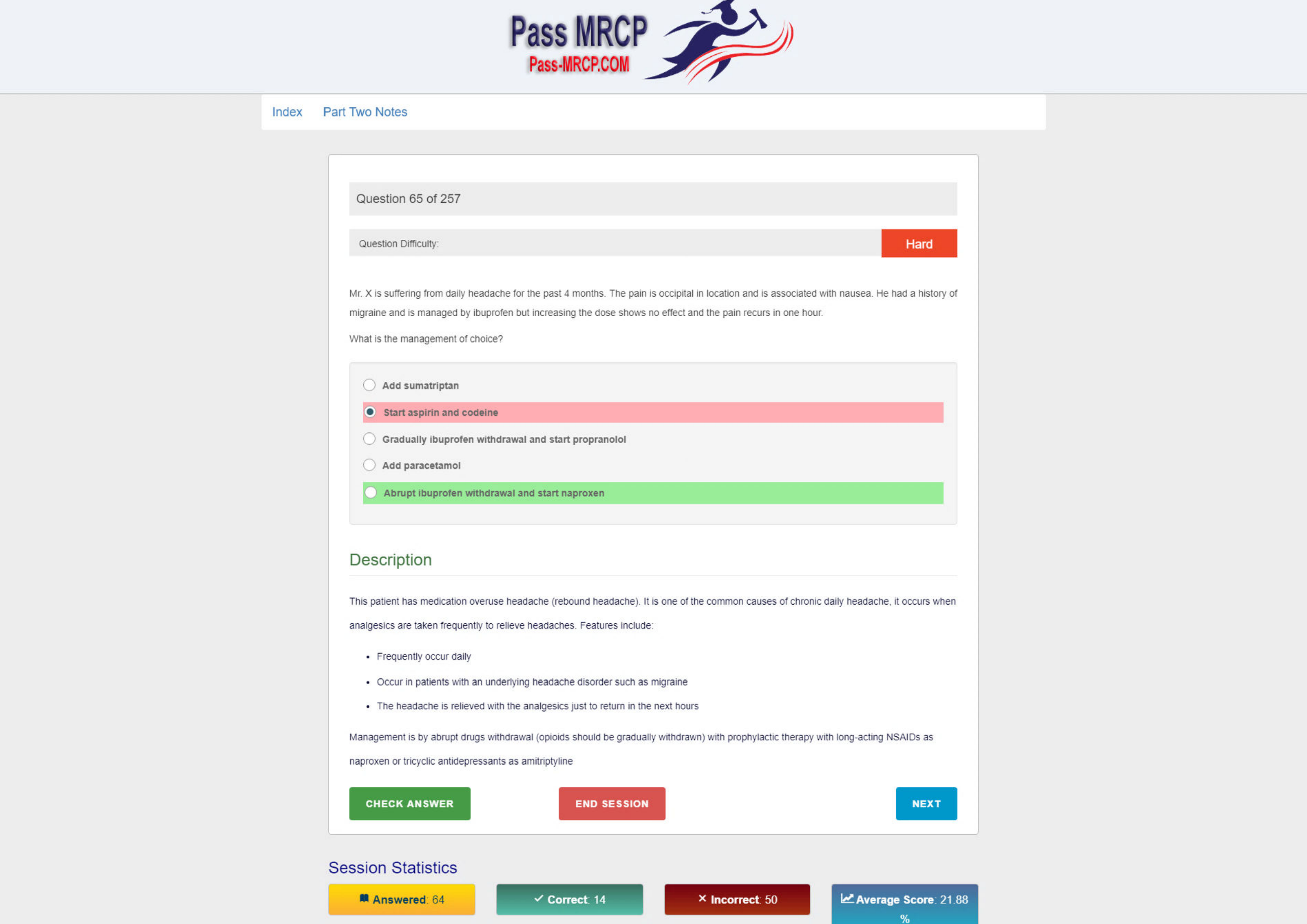
Session Statistics

Answered: 63

✓ Correct: 14

× Incorrect: 49

Average Score: 22.22 %



Question 65 of 257

Question Difficulty: **Hard**

Mr. X is suffering from daily headache for the past 4 months. The pain is occipital in location and is associated with nausea. He had a history of migraine and is managed by ibuprofen but increasing the dose shows no effect and the pain recurs in one hour.

What is the management of choice?

○ **Add sumatriptan**

● **Start aspirin and codeine**

○ **Gradually ibuprofen withdrawal and start propranolol**

○ **Add paracetamol**

○ **Abrupt ibuprofen withdrawal and start naproxen**

Description

This patient has medication overuse headache (rebound headache). It is one of the common causes of chronic daily headache, it occurs when analgesics are taken frequently to relieve headaches. Features include:

- Frequently occur daily
- Occur in patients with an underlying headache disorder such as migraine
- The headache is relieved with the analgesics just to return in the next hours

Management is by abrupt drugs withdrawal (opioids should be gradually withdrawn) with prophylactic therapy with long-acting NSAIDs as naproxen or tricyclic antidepressants as amitriptyline

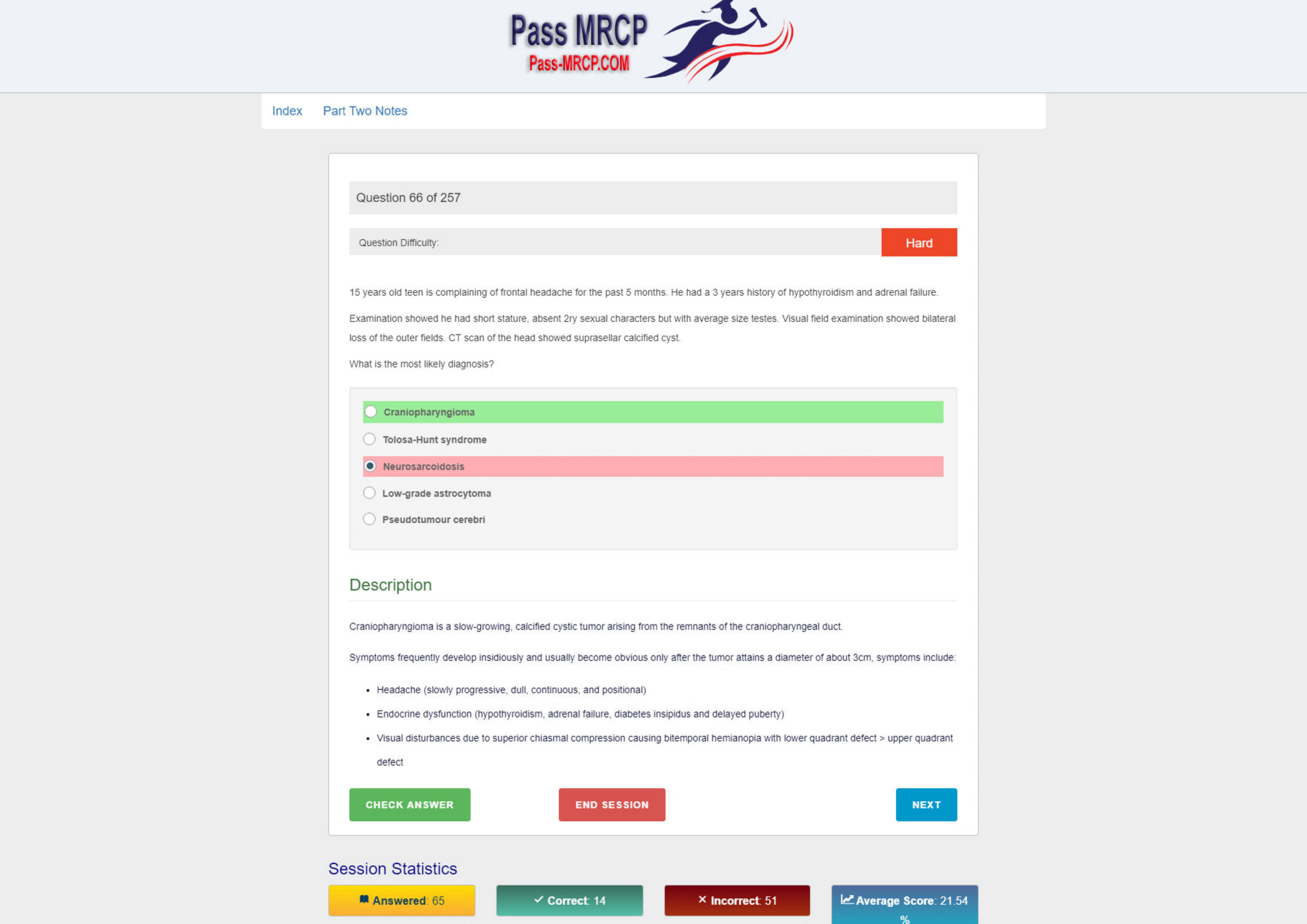
Session Statistics

Answered: 64

✓ **Correct**: 14

× **Incorrect**: 50

Average Score: 21.88 %



Question 66 of 257

Question Difficulty: Hard

15 years old teen is complaining of frontal headache for the past 5 months. He had a 3 years history of hypothyroidism and adrenal failure.

Examination showed he had short stature, absent 2ry sexual characters but with average size testes. Visual field examination showed bilateral loss of the outer fields. CT scan of the head showed suprasellar calcified cyst.

What is the most likely diagnosis?

○ **Craniopharyngioma**
○ **Tolosa-Hunt syndrome**
● **Neurosarcoidosis**
○ **Low-grade astrocytoma**
○ **Pseudotumour cerebri**

Description

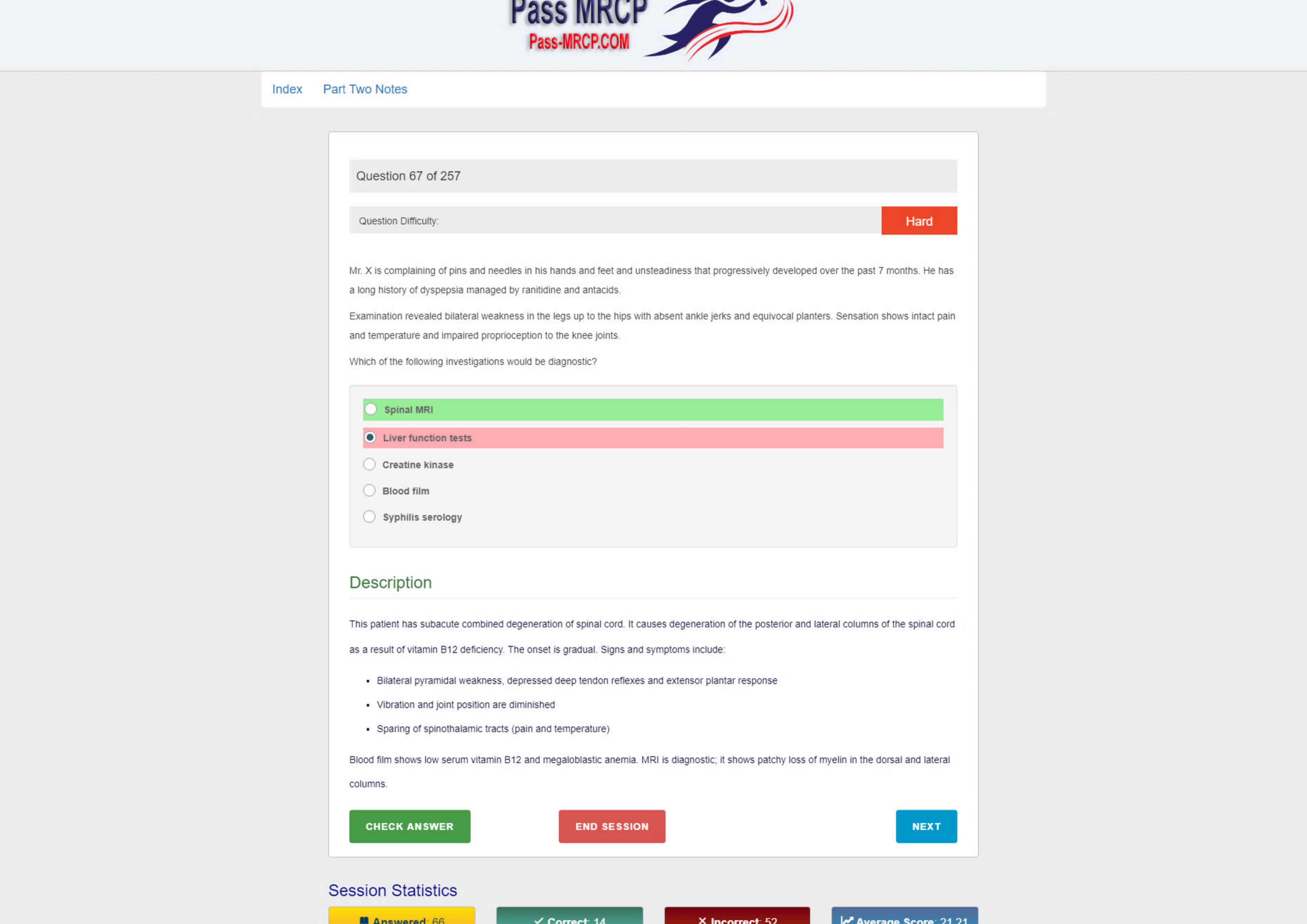
Craniopharyngioma is a slow-growing, calcified cystic tumor arising from the remnants of the craniopharyngeal duct.

Symptoms frequently develop insidiously and usually become obvious only after the tumor attains a diameter of about 3cm, symptoms include:

- Headache (slowly progressive, dull, continuous, and positional)
- Endocrine dysfunction (hypothyroidism, adrenal failure, diabetes insipidus and delayed puberty)
- Visual disturbances due to superior chiasmal compression causing bitemporal hemianopia with lower quadrant defect > upper quadrant defect

Session Statistics

Answered: 65
✓ **Correct**: 14
× **Incorrect**: 51
Average Score: 21.54 %



Question 67 of 257

Question Difficulty: Hard

Mr. X is complaining of pins and needles in his hands and feet and unsteadiness that progressively developed over the past 7 months. He has a long history of dyspepsia managed by ranitidine and antacids.

Examination revealed bilateral weakness in the legs up to the hips with absent ankle jerks and equivocal planters. Sensation shows intact pain and temperature and impaired proprioception to the knee joints.

Which of the following investigations would be diagnostic?

○ **Spinal MRI**
● **Liver function tests**
○ **Creatine kinase**
○ **Blood film**
○ **Syphilis serology**

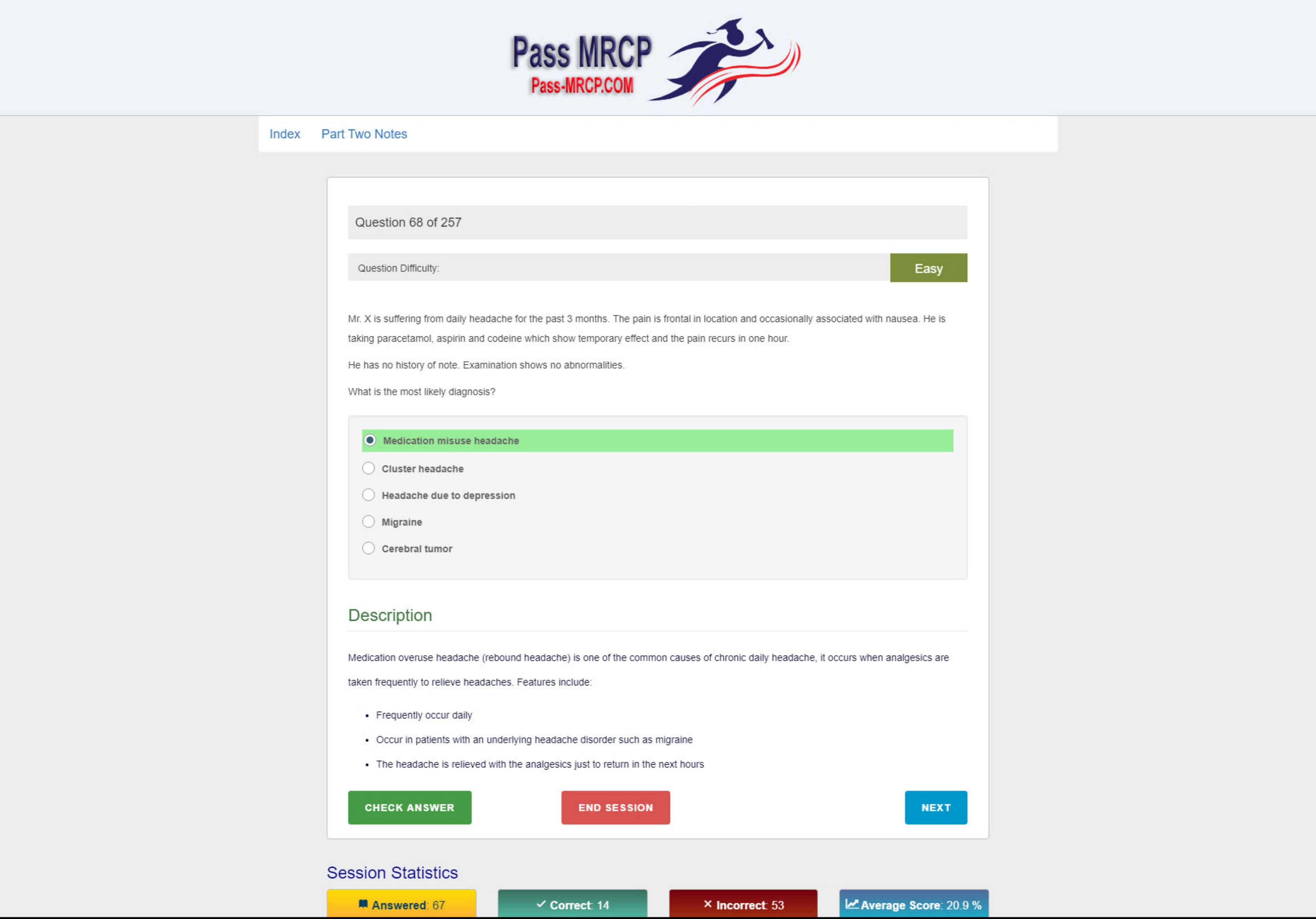
Description

This patient has subacute combined degeneration of spinal cord. It causes degeneration of the posterior and lateral columns of the spinal cord as a result of vitamin B12 deficiency. The onset is gradual. Signs and symptoms include:

- Bilateral pyramidal weakness, depressed deep tendon reflexes and extensor plantar response
- Vibration and joint position are diminished
- Sparing of spinothalamic tracts (pain and temperature)

Blood film shows low serum vitamin B12 and megaloblastic anemia. MRI is diagnostic; it shows patchy loss of myelin in the dorsal and lateral columns.

Session Statistics



Question 68 of 257

Question Difficulty: Easy

Mr. X is suffering from daily headache for the past 3 months. The pain is frontal in location and occasionally associated with nausea. He is taking paracetamol, aspirin and codeine which show temporary effect and the pain recurs in one hour.

He has no history of note. Examination shows no abnormalities.

What is the most likely diagnosis?

● **Medication misuse headache**
○ **Cluster headache**
○ **Headache due to depression**
○ **Migraine**
○ **Cerebral tumor**

Description

Medication overuse headache (rebound headache) is one of the common causes of chronic daily headache, it occurs when analgesics are taken frequently to relieve headaches. Features include:

- Frequently occur daily
- Occur in patients with an underlying headache disorder such as migraine
- The headache is relieved with the analgesics just to return in the next hours

Session Statistics

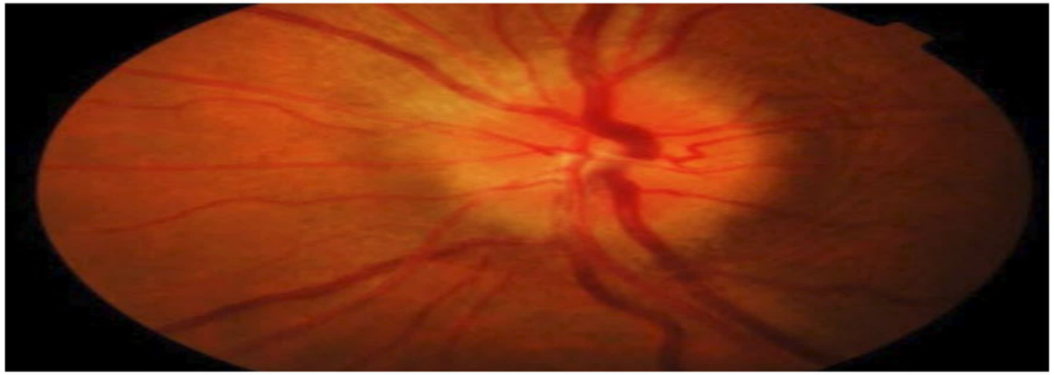
Answered: 67
✓ **Correct**: 14
× **Incorrect**: 53
Average Score: 20.9 %

Question 69 of 257

Question Difficulty: **Hard**

Mr. X is suffering from pain behind the left eye with diminished visual acuity in this eye. His visual acuity in this eye was 6/36.

Examination shows relative afferent pupillary defect with normal accommodation response and central scotoma. Fundoscopy is shown in the image.



What is most likely diagnosis?

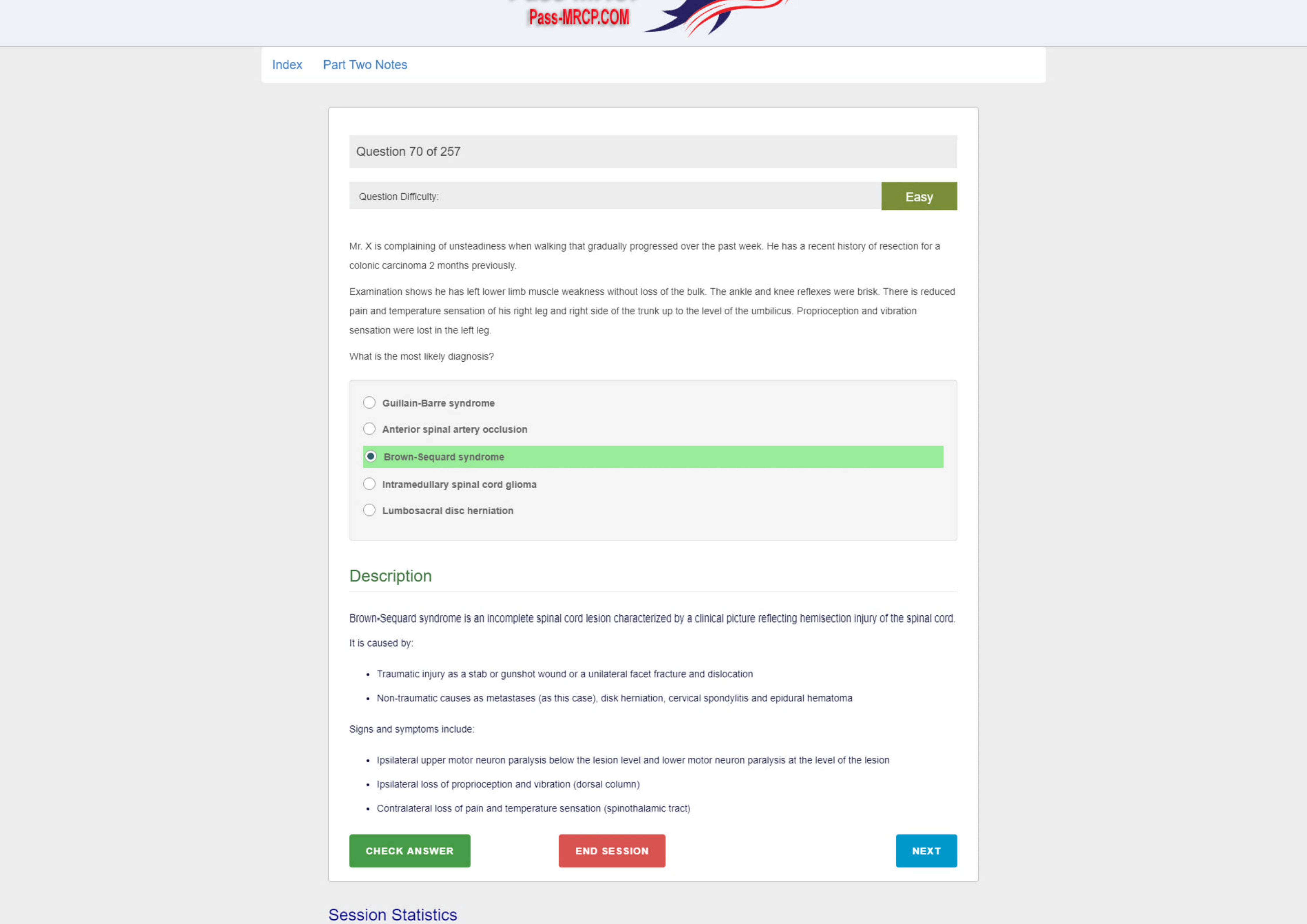
○ **Optic nerve compression**
○ **Ischemic optic neuritis**
○ **Occipital lobe infarction**
● **Demyelinating optic neuritis**
○ **Glaucoma**

Description

Optic neuritis is manifested by:

- Partial or complete sudden loss of vision
- Pain on movement of the affected eye
- Relative afferent pupillary defect (Marcus Gunn pupil) with normal accommodation response
- Central scotoma
- Disturbed color vision (especially red)
- Fundoscopy shows swollen optic disc

CHECK ANSWER END SESSION NEXT



Question 70 of 257

Question Difficulty: **Easy**

Mr. X is complaining of unsteadiness when walking that gradually progressed over the past week. He has a recent history of resection for a colonic carcinoma 2 months previously.

Examination shows he has left lower limb muscle weakness without loss of the bulk. The ankle and knee reflexes were brisk. There is reduced pain and temperature sensation of his right leg and right side of the trunk up to the level of the umbilicus. Proprioception and vibration sensation were lost in the left leg.

What is the most likely diagnosis?

○ **Guillain-Barre syndrome**
○ **Anterior spinal artery occlusion**
● **Brown-Sequard syndrome**
○ **Intramedullary spinal cord glioma**
○ **Lumbosacral disc herniation**

Description

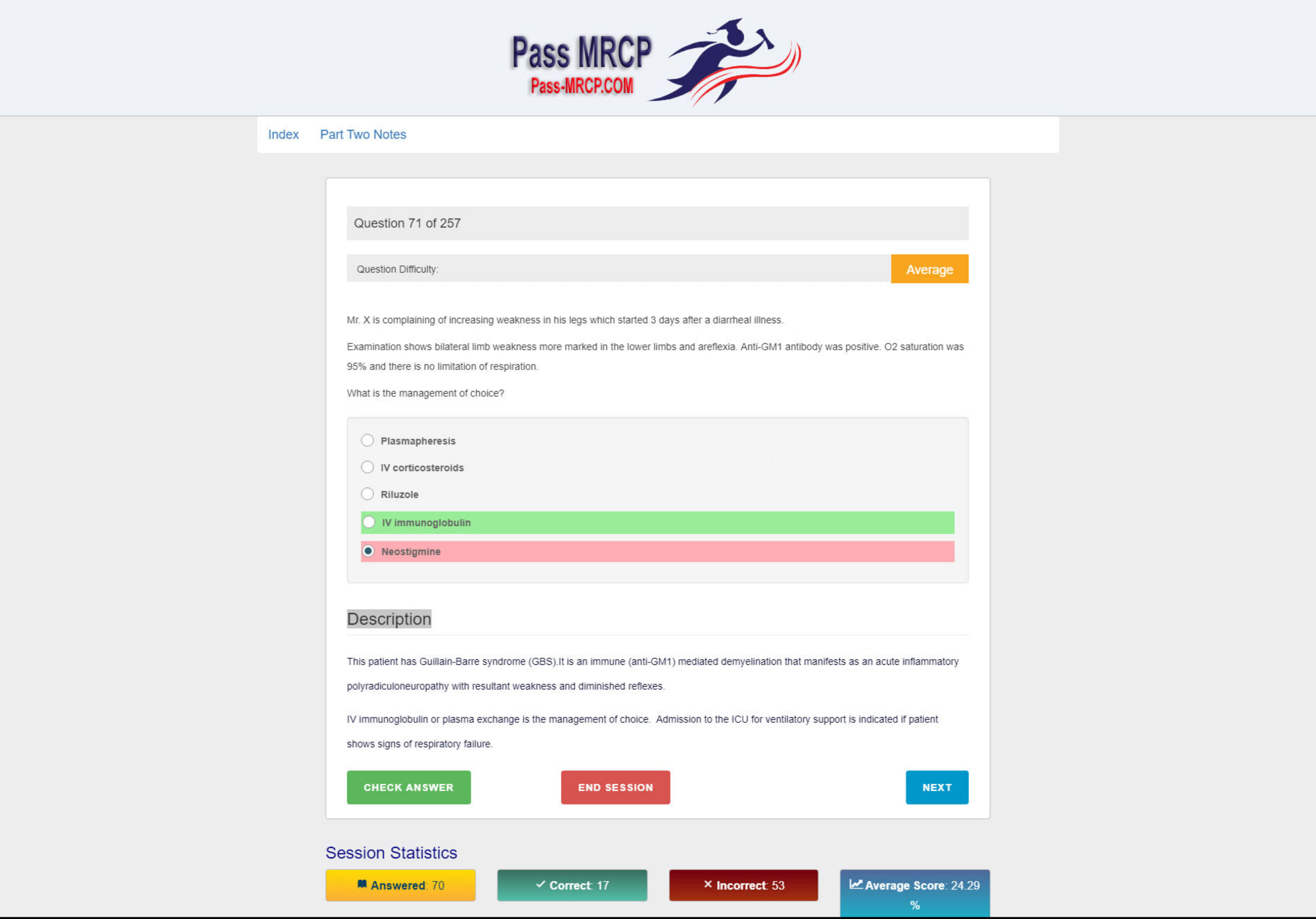
Brown-Sequard syndrome is an incomplete spinal cord lesion characterized by a clinical picture reflecting hemisection injury of the spinal cord.

It is caused by:

- Traumatic injury as a stab or gunshot wound or a unilateral facet fracture and dislocation
- Non-traumatic causes as metastases (as this case), disk herniation, cervical spondylitis and epidural hematoma

Signs and symptoms include:

- Ipsilateral upper motor neuron paralysis below the lesion level and lower motor neuron paralysis at the level of the lesion
- Ipsilateral loss of proprioception and vibration (dorsal column)
- Contralateral loss of pain and temperature sensation (spinothalamic tract)



Question 71 of 257

Question Difficulty: **Average**

Mr. X is complaining of increasing weakness in his legs which started 3 days after a diarrheal illness.

Examination shows bilateral limb weakness more marked in the lower limbs and areflexia. Anti-GM1 antibody was positive. O2 saturation was 95% and there is no limitation of respiration.

What is the management of choice?

- ○ **Plasmapheresis**
- ○ **IV corticosteroids**
- ○ **Riluzole**
- ○ **IV immunoglobulin**
- ● **Neostigmine**

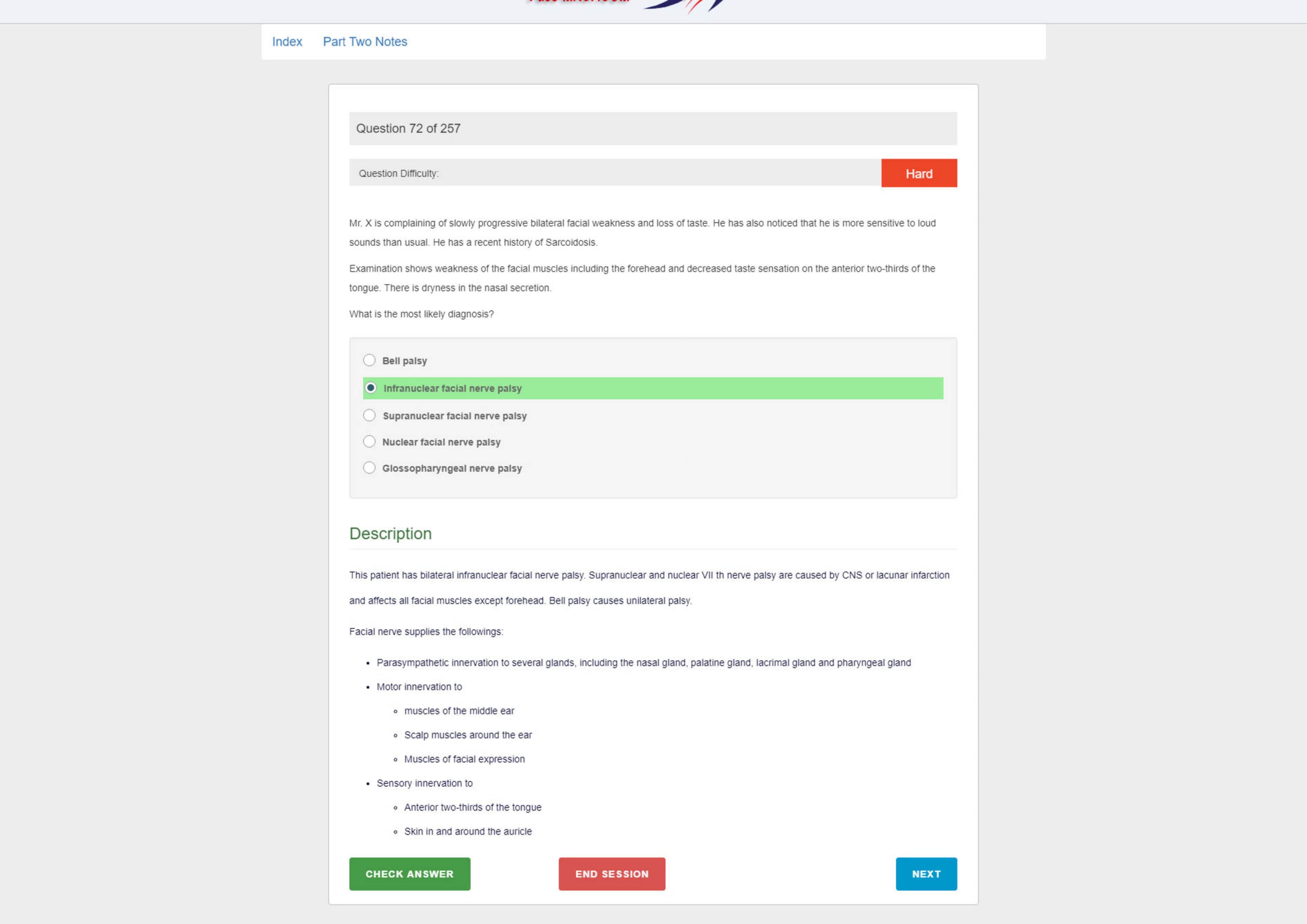
Description

This patient has Guillain-Barre syndrome (GBS).It is an immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

IV immunoglobulin or plasma exchange is the management of choice. Admission to the ICU for ventilatory support is indicated if patient shows signs of respiratory failure.

Session Statistics

Answered: 70
✓ **Correct**: 17
✕ **Incorrect**: 53
Average Score: 24.29 %



Question 72 of 257

Question Difficulty: Hard

Mr. X is complaining of slowly progressive bilateral facial weakness and loss of taste. He has also noticed that he is more sensitive to loud sounds than usual. He has a recent history of Sarcoidosis.

Examination shows weakness of the facial muscles including the forehead and decreased taste sensation on the anterior two-thirds of the tongue. There is dryness in the nasal secretion.

What is the most likely diagnosis?

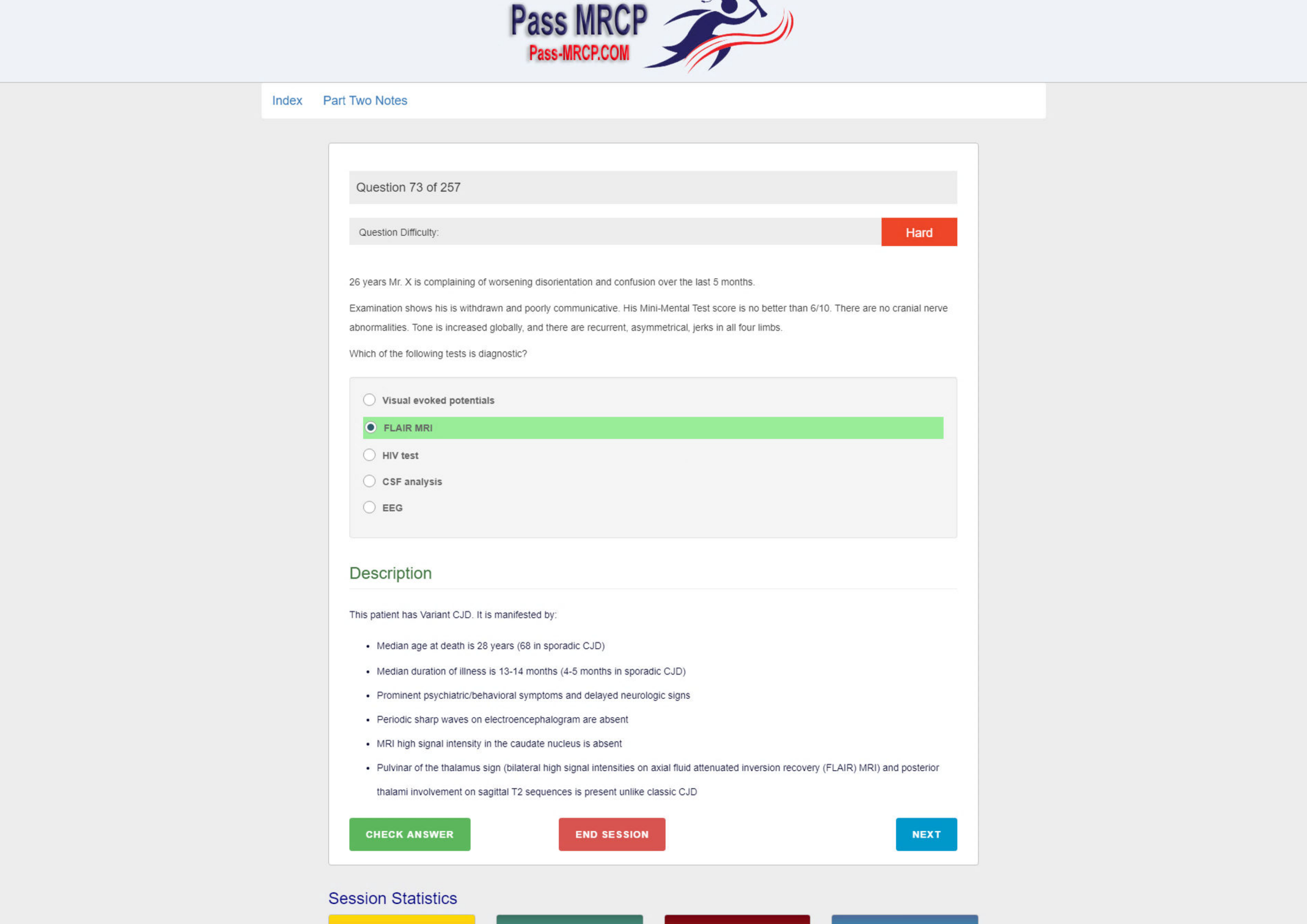
○ **Bell palsy**
● **Infranuclear facial nerve palsy**
○ **Supranuclear facial nerve palsy**
○ **Nuclear facial nerve palsy**
○ **Glossopharyngeal nerve palsy**

Description

This patient has bilateral infranuclear facial nerve palsy. Supranuclear and nuclear VII th nerve palsy are caused by CNS or lacunar infarction and affects all facial muscles except forehead. Bell palsy causes unilateral palsy.

Facial nerve supplies the followings:

- Parasympathetic innervation to several glands, including the nasal gland, palatine gland, lacrimal gland and pharyngeal gland
- Motor innervation to
  - muscles of the middle ear
  - Scalp muscles around the ear
  - Muscles of facial expression
- Sensory innervation to
  - Anterior two-thirds of the tongue
  - Skin in and around the auricle



Question 73 of 257

Question Difficulty: Hard

26 years Mr. X is complaining of worsening disorientation and confusion over the last 5 months.

Examination shows his is withdrawn and poorly communicative. His Mini-Mental Test score is no better than 6/10. There are no cranial nerve abnormalities. Tone is increased globally, and there are recurrent, asymmetrical, jerks in all four limbs.

Which of the following tests is diagnostic?

○ **Visual evoked potentials**

● **FLAIR MRI**

○ **HIV test**

○ **CSF analysis**

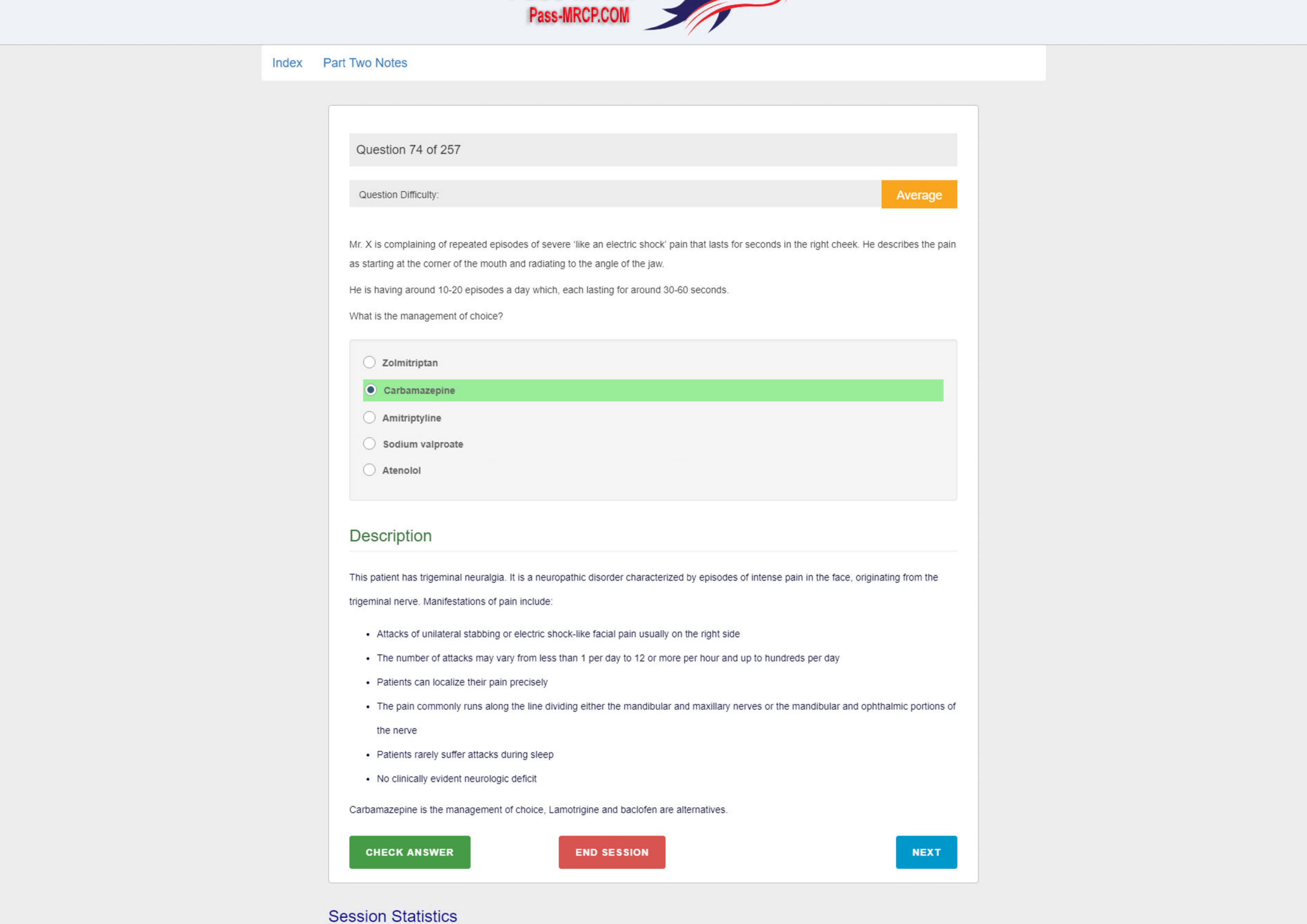
○ **EEG**

Description

This patient has Variant CJD. It is manifested by:

- Median age at death is 28 years (68 in sporadic CJD)
- Median duration of illness is 13-14 months (4-5 months in sporadic CJD)
- Prominent psychiatric/behavioral symptoms and delayed neurologic signs
- Periodic sharp waves on electroencephalogram are absent
- MRI high signal intensity in the caudate nucleus is absent
- Pulvinar of the thalamus sign (bilateral high signal intensities on axial fluid attenuated inversion recovery (FLAIR) MRI) and posterior thalami involvement on sagittal T2 sequences is present unlike classic CJD

Session Statistics



Question 74 of 257

Question Difficulty: Average

Mr. X is complaining of repeated episodes of severe 'like an electric shock' pain that lasts for seconds in the right cheek. He describes the pain as starting at the corner of the mouth and radiating to the angle of the jaw.

He is having around 10-20 episodes a day which, each lasting for around 30-60 seconds.

What is the management of choice?

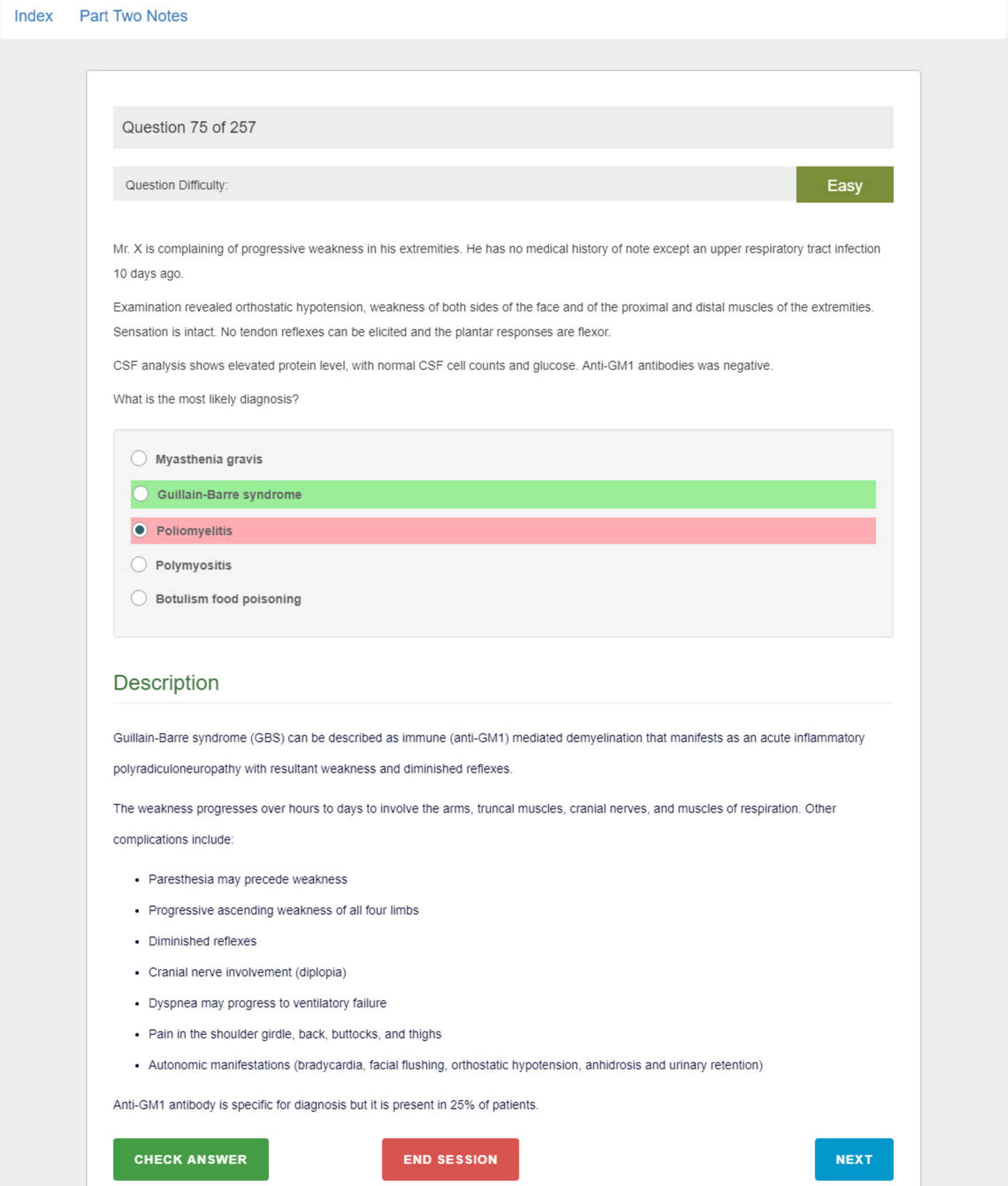
○ **Zolmitriptan**
● **Carbamazepine**
○ **Amitriptyline**
○ **Sodium valproate**
○ **Atenolol**

Description

This patient has trigeminal neuralgia. It is a neuropathic disorder characterized by episodes of intense pain in the face, originating from the trigeminal nerve. Manifestations of pain include:

- Attacks of unilateral stabbing or electric shock-like facial pain usually on the right side
- The number of attacks may vary from less than 1 per day to 12 or more per hour and up to hundreds per day
- Patients can localize their pain precisely
- The pain commonly runs along the line dividing either the mandibular and maxillary nerves or the mandibular and ophthalmic portions of the nerve
- Patients rarely suffer attacks during sleep
- No clinically evident neurologic deficit

Carbamazepine is the management of choice, Lamotrigine and baclofen are alternatives.



Question 75 of 257

Question Difficulty: Easy

Mr. X is complaining of progressive weakness in his extremities. He has no medical history of note except an upper respiratory tract infection 10 days ago.

Examination revealed orthostatic hypotension, weakness of both sides of the face and of the proximal and distal muscles of the extremities. Sensation is intact. No tendon reflexes can be elicited and the plantar responses are flexor.

CSF analysis shows elevated protein level, with normal CSF cell counts and glucose. Anti-GM1 antibodies was negative.

What is the most likely diagnosis?

○ **Myasthenia gravis**
○ **Guillain-Barre syndrome**
● **Poliomyelitis**
○ **Polymyositis**
○ **Botulism food poisoning**

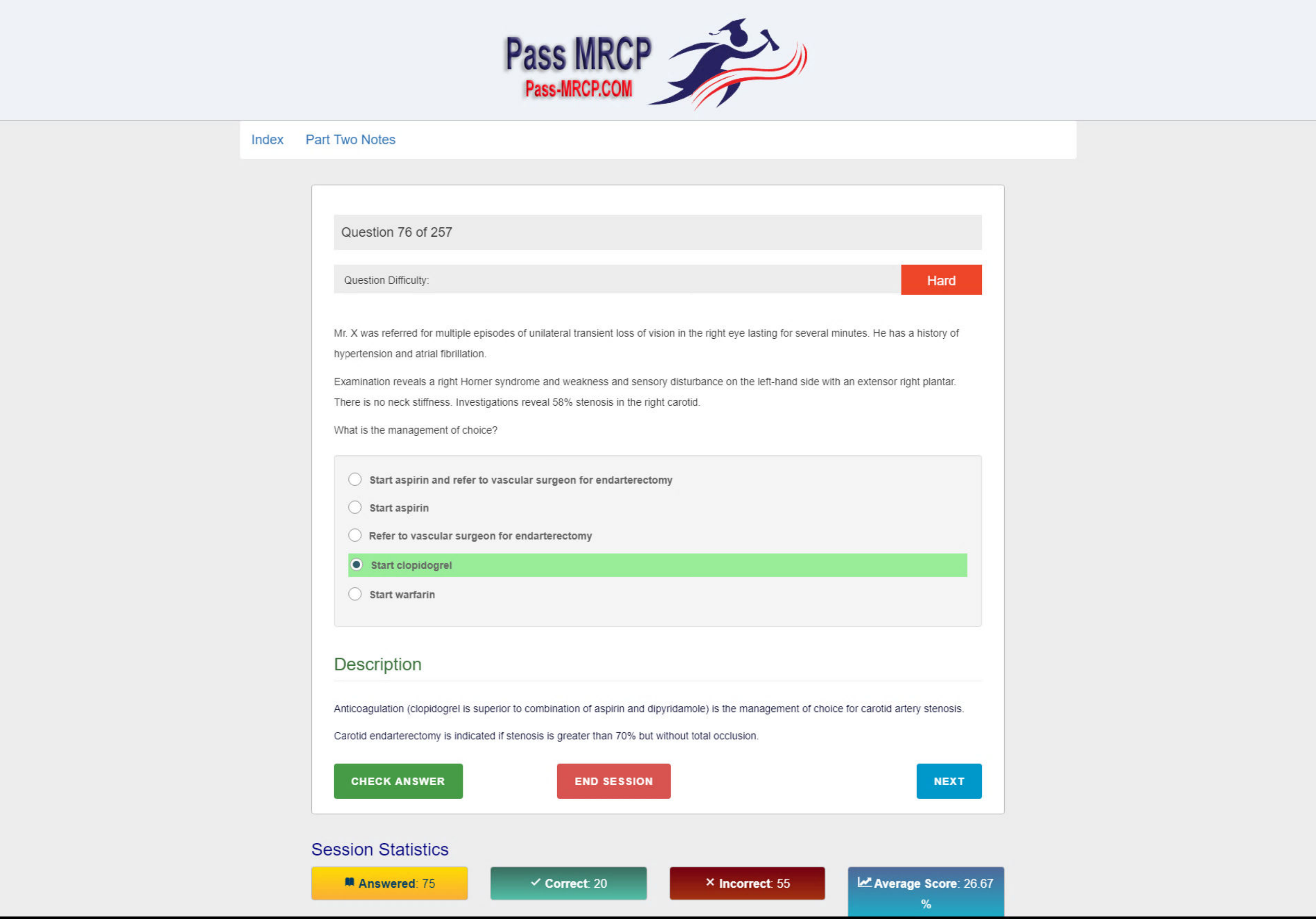
Description

Guillain-Barre syndrome (GBS) can be described as immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

The weakness progresses over hours to days to involve the arms, truncal muscles, cranial nerves, and muscles of respiration. Other complications include:

- Paresthesia may precede weakness
- Progressive ascending weakness of all four limbs
- Diminished reflexes
- Cranial nerve involvement (diplopia)
- Dyspnea may progress to ventilatory failure
- Pain in the shoulder girdle, back, buttocks, and thighs
- Autonomic manifestations (bradycardia, facial flushing, orthostatic hypotension, anhidrosis and urinary retention)

Anti-GM1 antibody is specific for diagnosis but it is present in 25% of patients.



Question 76 of 257

Question Difficulty: **Hard**

Mr. X was referred for multiple episodes of unilateral transient loss of vision in the right eye lasting for several minutes. He has a history of hypertension and atrial fibrillation.

Examination reveals a right Horner syndrome and weakness and sensory disturbance on the left-hand side with an extensor right plantar. There is no neck stiffness. Investigations reveal 58% stenosis in the right carotid.

What is the management of choice?

- ○ **Start aspirin and refer to vascular surgeon for endarterectomy**
- ○ **Start aspirin**
- ○ **Refer to vascular surgeon for endarterectomy**
- ● **Start clopidogrel**
- ○ **Start warfarin**

Description

Anticoagulation (clopidogrel is superior to combination of aspirin and dipyridamole) is the management of choice for carotid artery stenosis.

Carotid endarterectomy is indicated if stenosis is greater than 70% but without total occlusion.

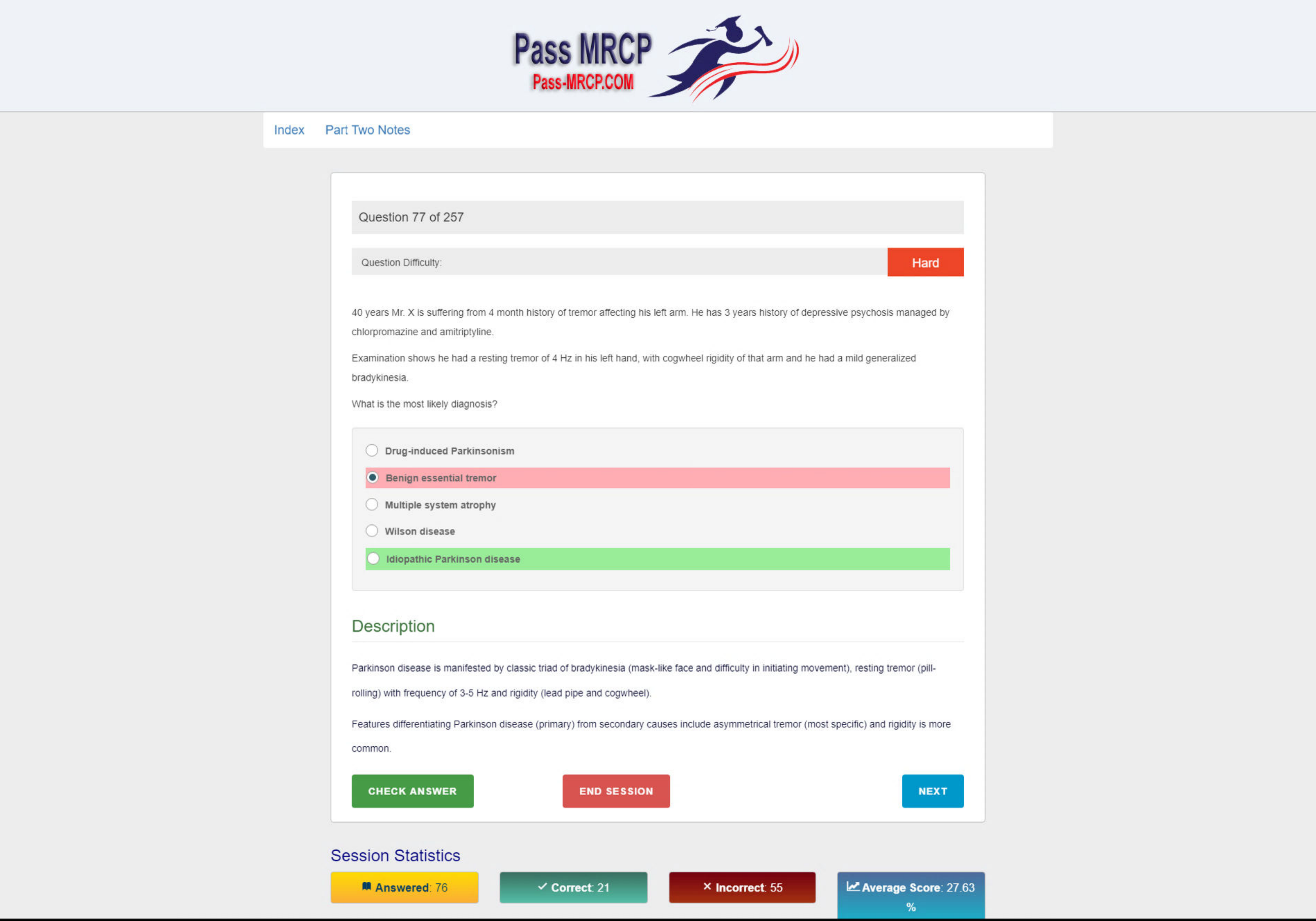
Session Statistics

Answered: 75

✓ **Correct**: 20

✕ **Incorrect**: 55

Average Score: 26.67 %



Question 77 of 257

Question Difficulty: **Hard**

40 years Mr. X is suffering from 4 month history of tremor affecting his left arm. He has 3 years history of depressive psychosis managed by chlorpromazine and amitriptyline.

Examination shows he had a resting tremor of 4 Hz in his left hand, with cogwheel rigidity of that arm and he had a mild generalized bradykinesia.

What is the most likely diagnosis?

- ○ **Drug-induced Parkinsonism**
- ● **Benign essential tremor**
- ○ **Multiple system atrophy**
- ○ **Wilson disease**
- ○ **Idiopathic Parkinson disease**

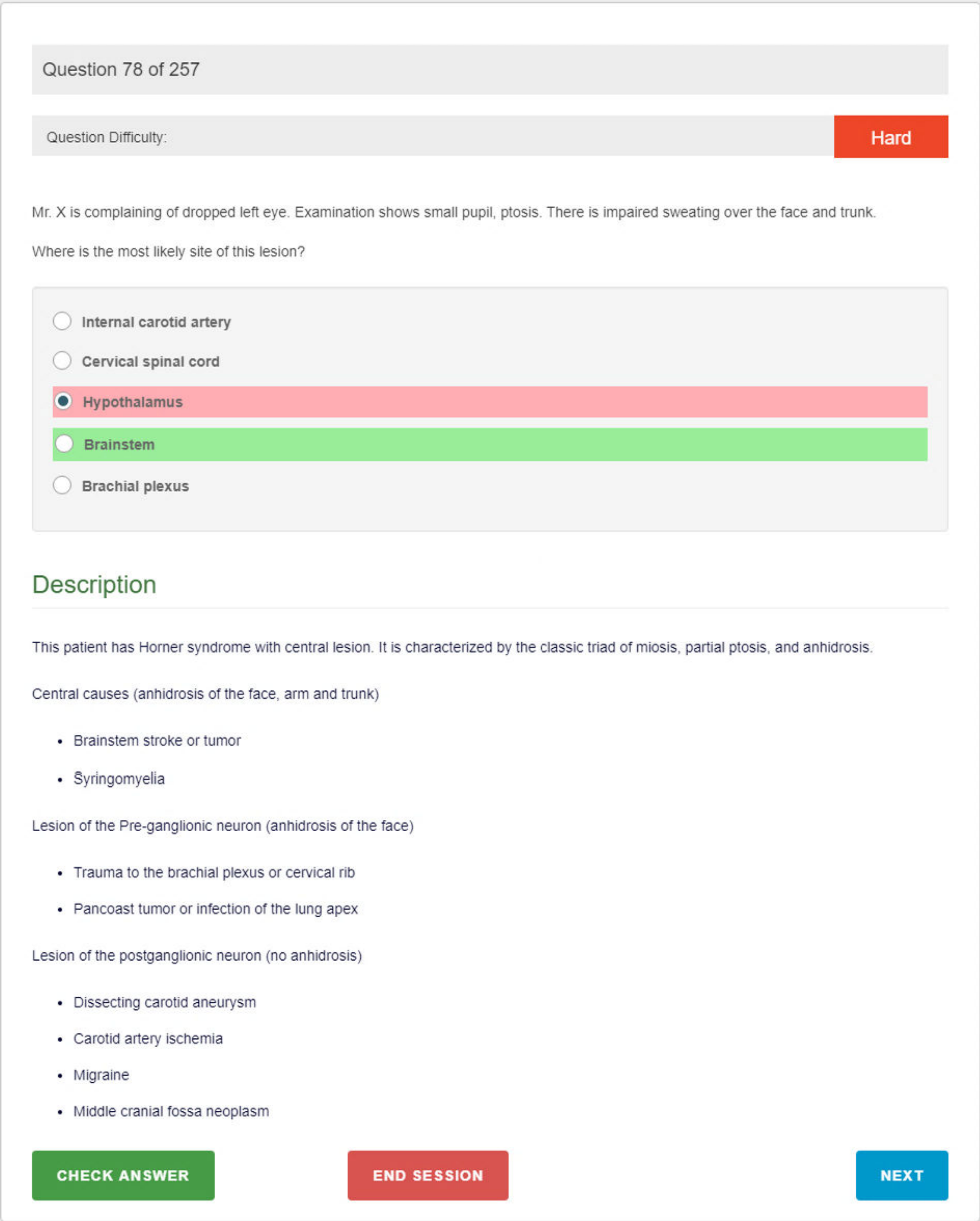
Description

Parkinson disease is manifested by classic triad of bradykinesia (mask-like face and difficulty in initiating movement), resting tremor (pill-rolling) with frequency of 3-5 Hz and rigidity (lead pipe and cogwheel).

Features differentiating Parkinson disease (primary) from secondary causes include asymmetrical tremor (most specific) and rigidity is more common.

Session Statistics

Answered: 76
✓ **Correct**: 21
× **Incorrect**: 55
Average Score: 27.63 %



Question 78 of 257

Question Difficulty: **Hard**

Mr. X is complaining of dropped left eye. Examination shows small pupil, ptosis. There is impaired sweating over the face and trunk.

Where is the most likely site of this lesion?

○ **Internal carotid artery**
○ **Cervical spinal cord**
● **Hypothalamus**
○ **Brainstem**
○ **Brachial plexus**

Description

This patient has Horner syndrome with central lesion. It is characterized by the classic triad of miosis, partial ptosis, and anhidrosis.

Central causes (anhidrosis of the face, arm and trunk)

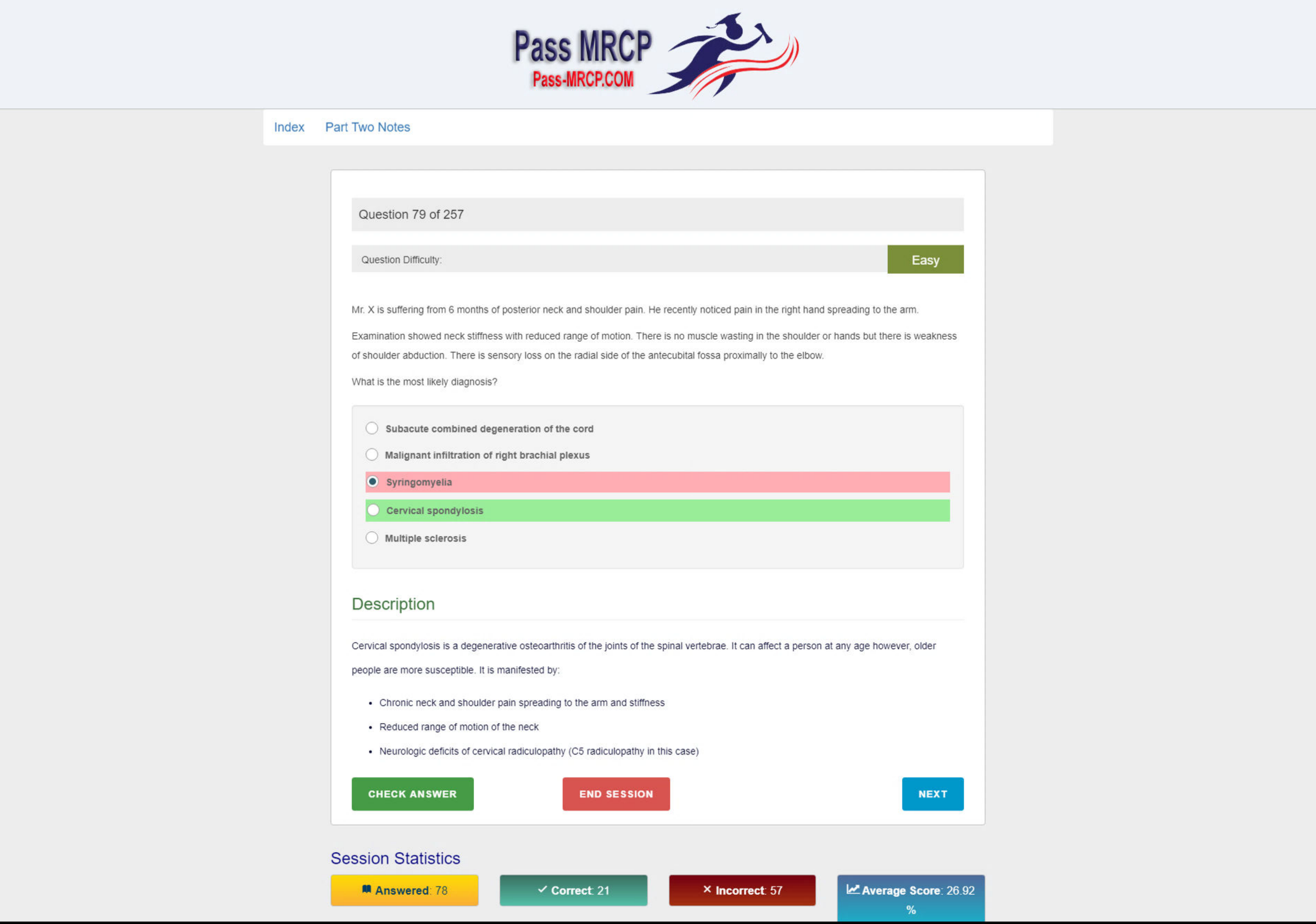
- Brainstem stroke or tumor
- Syringomyelia

Lesion of the Pre-ganglionic neuron (anhidrosis of the face)

- Trauma to the brachial plexus or cervical rib
- Pancoast tumor or infection of the lung apex

Lesion of the postganglionic neuron (no anhidrosis)

- Dissecting carotid aneurysm
- Carotid artery ischemia
- Migraine
- Middle cranial fossa neoplasm



Question 79 of 257

Question Difficulty: **Easy**

Mr. X is suffering from 6 months of posterior neck and shoulder pain. He recently noticed pain in the right hand spreading to the arm.

Examination showed neck stiffness with reduced range of motion. There is no muscle wasting in the shoulder or hands but there is weakness of shoulder abduction. There is sensory loss on the radial side of the antecubital fossa proximally to the elbow.

What is the most likely diagnosis?

○ **Subacute combined degeneration of the cord**
○ **Malignant infiltration of right brachial plexus**
● **Syringomyelia**
○ **Cervical spondylosis**
○ **Multiple sclerosis**

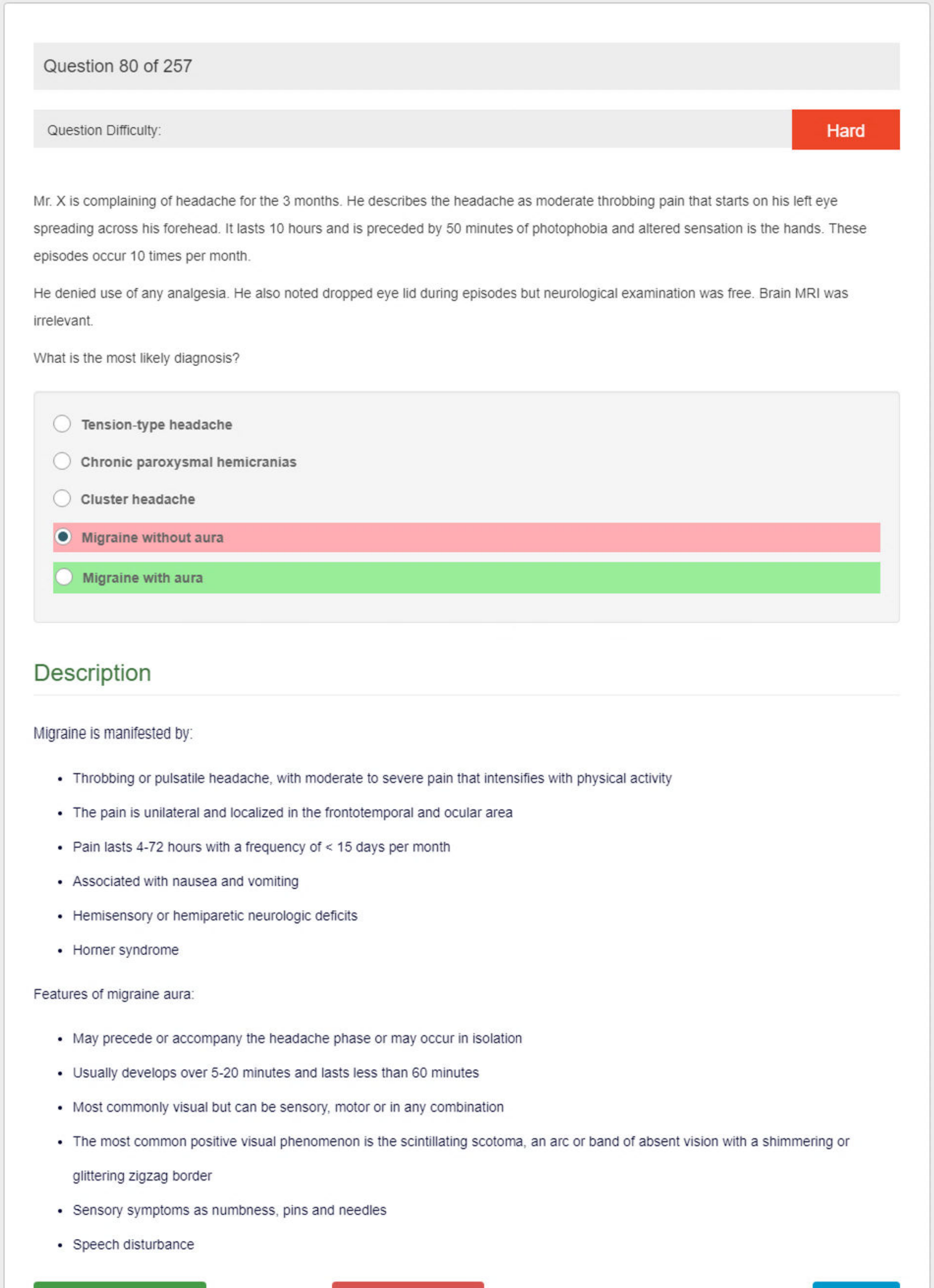
Description

Cervical spondylosis is a degenerative osteoarthritis of the joints of the spinal vertebrae. It can affect a person at any age however, older people are more susceptible. It is manifested by:

- Chronic neck and shoulder pain spreading to the arm and stiffness
- Reduced range of motion of the neck
- Neurologic deficits of cervical radiculopathy (C5 radiculopathy in this case)

Session Statistics

Answered: 78
✓ **Correct**: 21
✕ **Incorrect**: 57
Average Score: 26.92 %



Question 80 of 257

Question Difficulty: **Hard**

Mr. X is complaining of headache for the 3 months. He describes the headache as moderate throbbing pain that starts on his left eye spreading across his forehead. It lasts 10 hours and is preceded by 50 minutes of photophobia and altered sensation is the hands. These episodes occur 10 times per month.

He denied use of any analgesia. He also noted dropped eye lid during episodes but neurological examination was free. Brain MRI was irrelevant.

What is the most likely diagnosis?

○ **Tension-type headache**
○ **Chronic paroxysmal hemicranias**
○ **Cluster headache**
● **Migraine without aura**
○ **Migraine with aura**

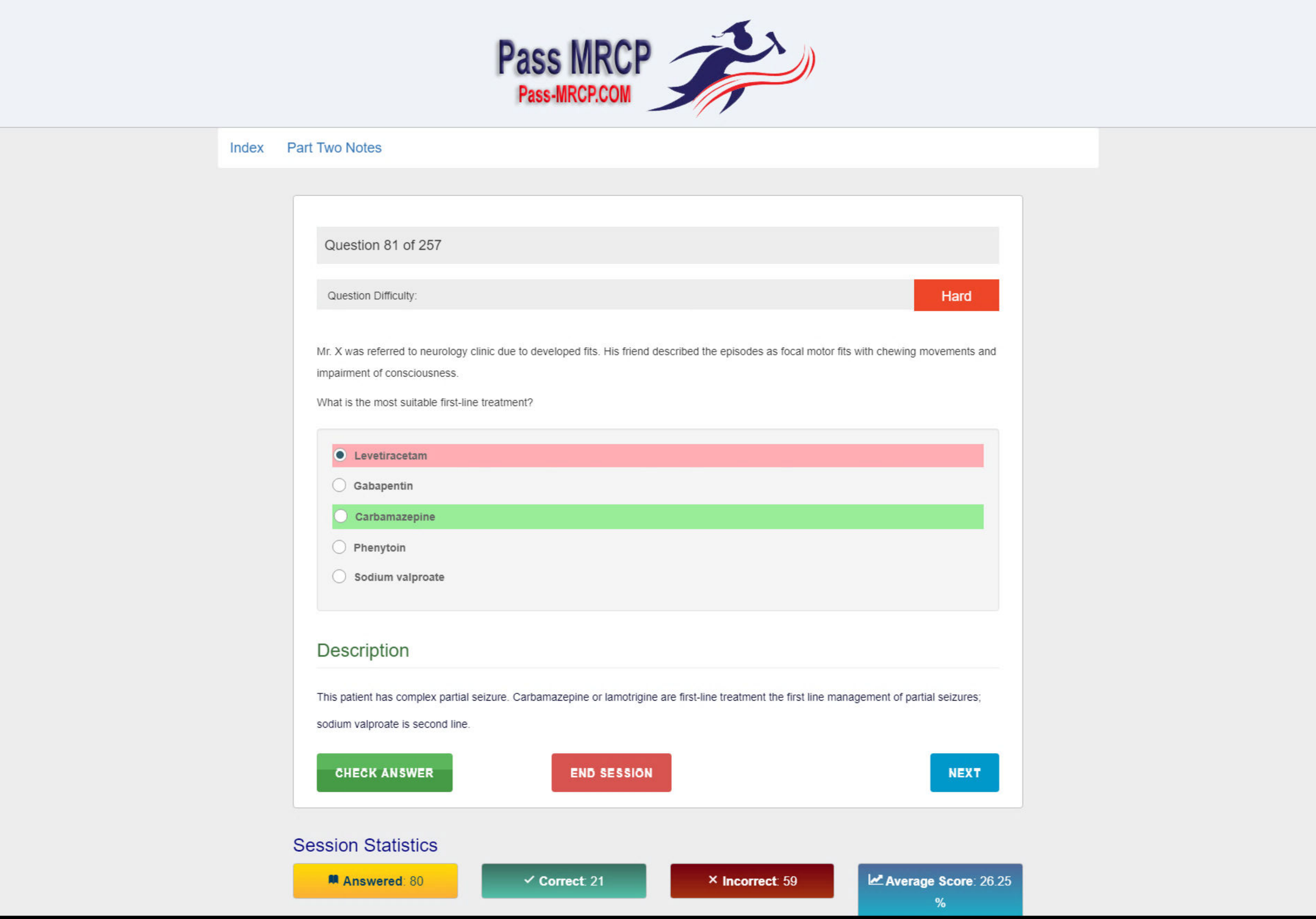
Description

Migraine is manifested by:

- Throbbing or pulsatile headache, with moderate to severe pain that intensifies with physical activity
- The pain is unilateral and localized in the frontotemporal and ocular area
- Pain lasts 4-72 hours with a frequency of < 15 days per month
- Associated with nausea and vomiting
- Hemisensory or hemiparetic neurologic deficits
- Horner syndrome

Features of migraine aura:

- May precede or accompany the headache phase or may occur in isolation
- Usually develops over 5-20 minutes and lasts less than 60 minutes
- Most commonly visual but can be sensory, motor or in any combination
- The most common positive visual phenomenon is the scintillating scotoma, an arc or band of absent vision with a shimmering or glittering zigzag border
- Sensory symptoms as numbness, pins and needles
- Speech disturbance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Part Two Notes

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Question Difficulty: Hard

Mr. X was referred to neurology clinic due to developed fits. His friend described the episodes as focal motor fits with chewing movements and impairment of consciousness.

What is the most suitable first-line treatment?

- ● Levetiracetam
- ○ Gabapentin
- ○ Carbamazepine
- ○ Phenytoin
- ○ Sodium valproate

Description

This patient has complex partial seizure. Carbamazepine or lamotrigine are first-line treatment the first line management of partial seizures; sodium valproate is second line.

CHECK ANSWER
END SESSION
NEXT

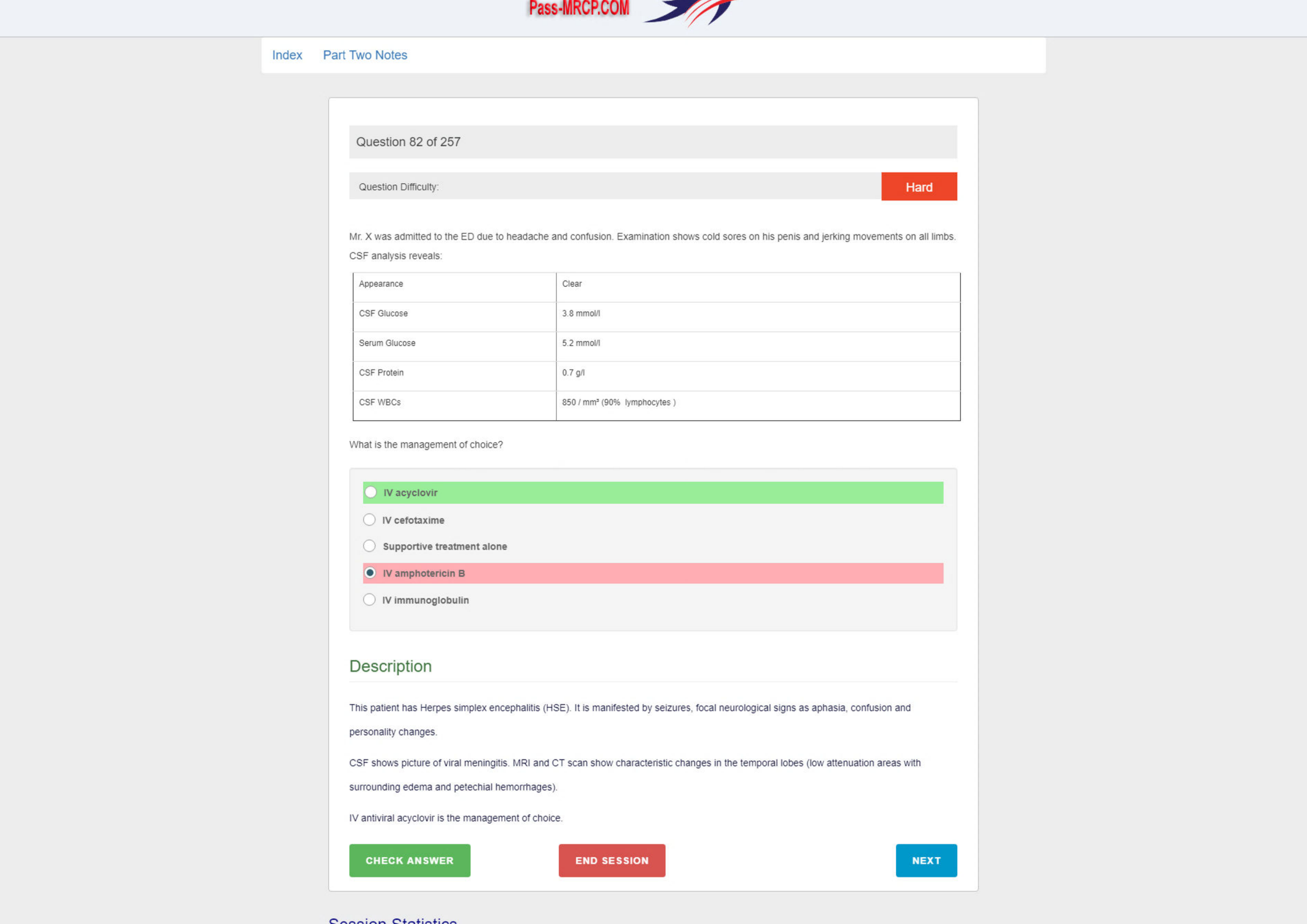
Session Statistics

Answered: 80

✓ Correct: 21

✕ Incorrect: 59

Average Score: 26.25 %



Question 82 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to headache and confusion. Examination shows cold sores on his penis and jerking movements on all limbs. CSF analysis reveals:

Appearance	Clear
CSF Glucose	3.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	850 / mm³ (90% lymphocytes)

What is the management of choice?

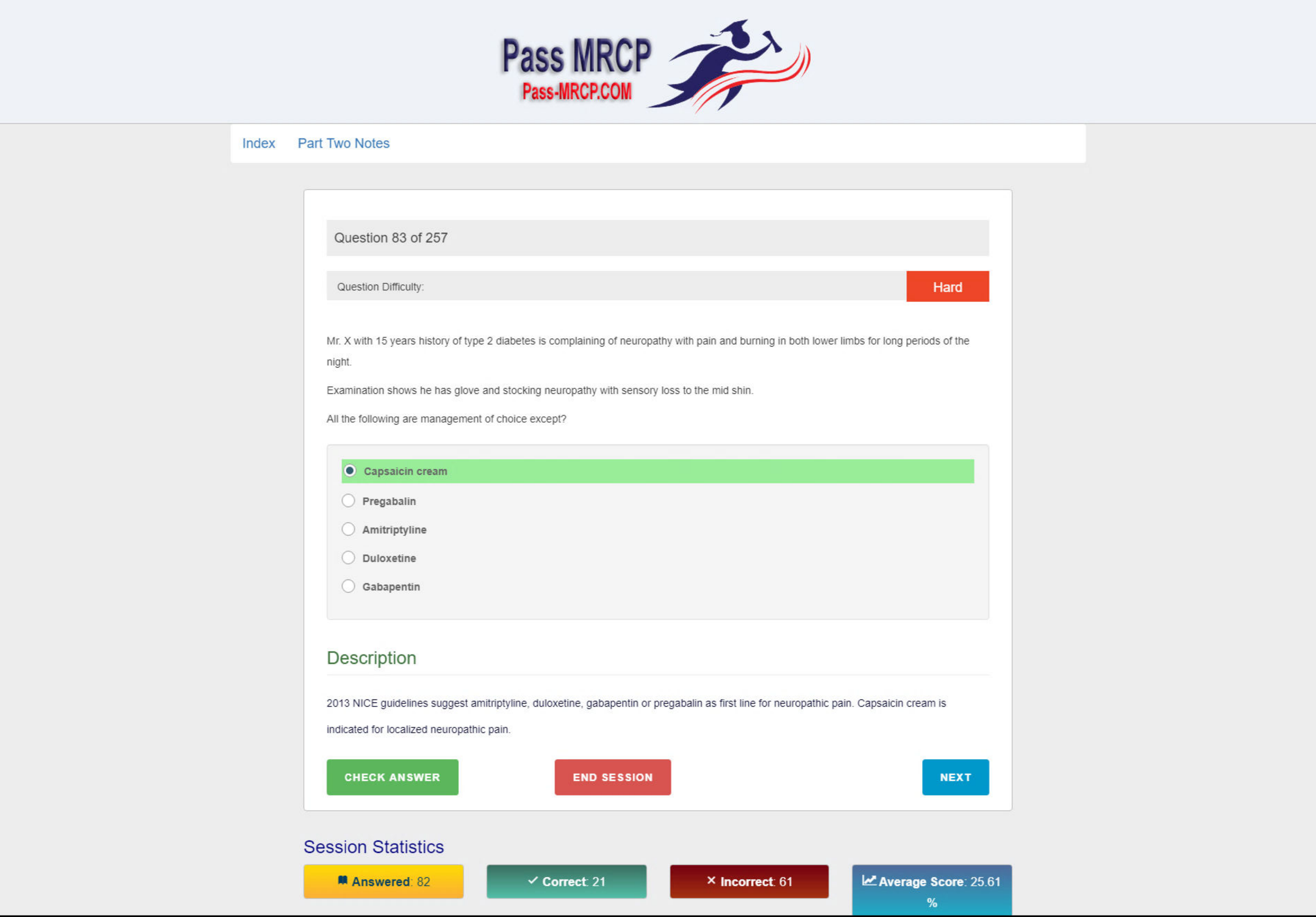
- ○ IV acyclovir
- ○ IV cefotaxime
- ○ Supportive treatment alone
- ● IV amphotericin B
- ○ IV immunoglobulin

Description

This patient has Herpes simplex encephalitis (HSE). It is manifested by seizures, focal neurological signs as aphasia, confusion and personality changes.

CSF shows picture of viral meningitis. MRI and CT scan show characteristic changes in the temporal lobes (low attenuation areas with surrounding edema and petechial hemorrhages).

IV antiviral acyclovir is the management of choice.



Question 83 of 257

Question Difficulty: Hard

Mr. X with 15 years history of type 2 diabetes is complaining of neuropathy with pain and burning in both lower limbs for long periods of the night.

Examination shows he has glove and stocking neuropathy with sensory loss to the mid shin.

All the following are management of choice except?

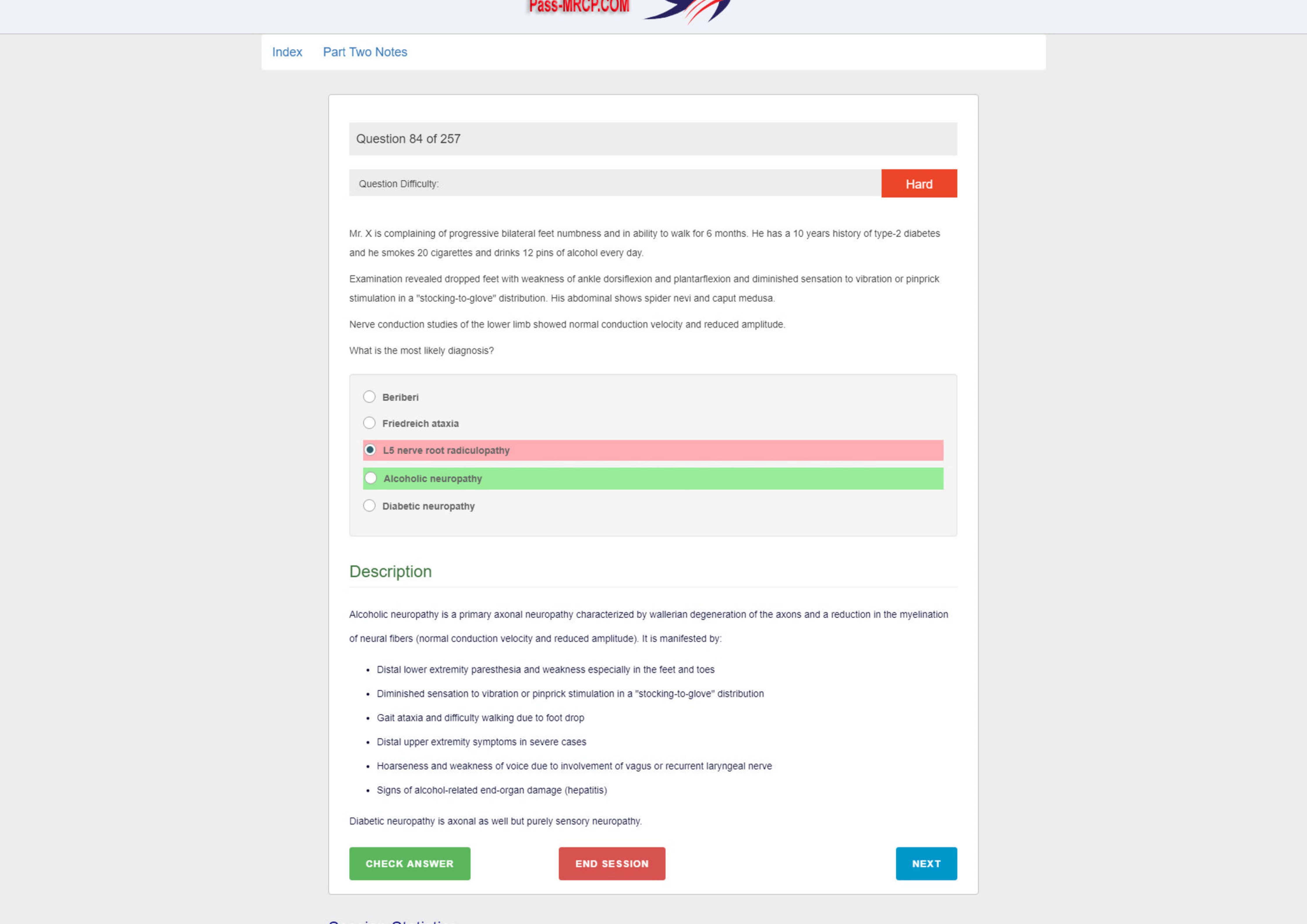
- ● **Capsaicin cream**
- ○ **Pregabalin**
- ○ **Amitriptyline**
- ○ **Duloxetine**
- ○ **Gabapentin**

Description

2013 NICE guidelines suggest amitriptyline, duloxetine, gabapentin or pregabalin as first line for neuropathic pain. Capsaicin cream is indicated for localized neuropathic pain.

Session Statistics

Answered: 82
Correct: 21
Incorrect: 61
Average Score: 25.61 %



Question 84 of 257

Question Difficulty: Hard

Mr. X is complaining of progressive bilateral feet numbness and in ability to walk for 6 months. He has a 10 years history of type-2 diabetes and he smokes 20 cigarettes and drinks 12 pins of alcohol every day.

Examination revealed dropped feet with weakness of ankle dorsiflexion and plantarflexion and diminished sensation to vibration or pinprick stimulation in a "stocking-to-glove" distribution. His abdominal shows spider nevi and caput medusa.

Nerve conduction studies of the lower limb showed normal conduction velocity and reduced amplitude.

What is the most likely diagnosis?

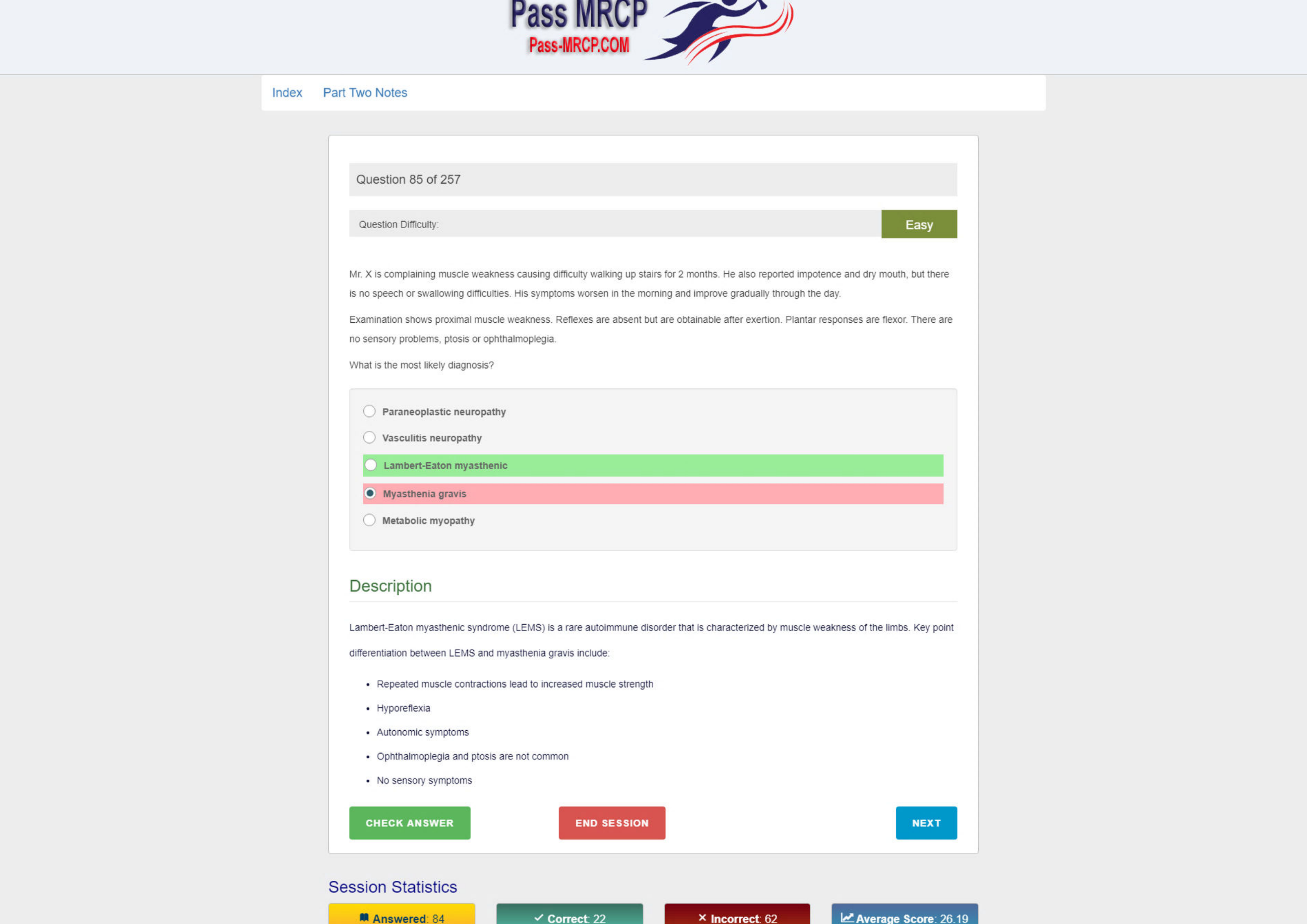
○ **Beriberi**
○ **Friedreich ataxia**
● **L5 nerve root radiculopathy**
○ **Alcoholic neuropathy**
○ **Diabetic neuropathy**

Description

Alcoholic neuropathy is a primary axonal neuropathy characterized by wallerian degeneration of the axons and a reduction in the myelination of neural fibers (normal conduction velocity and reduced amplitude). It is manifested by:

- Distal lower extremity paresthesia and weakness especially in the feet and toes
- Diminished sensation to vibration or pinprick stimulation in a "stocking-to-glove" distribution
- Gait ataxia and difficulty walking due to foot drop
- Distal upper extremity symptoms in severe cases
- Hoarseness and weakness of voice due to involvement of vagus or recurrent laryngeal nerve
- Signs of alcohol-related end-organ damage (hepatitis)

Diabetic neuropathy is axonal as well but purely sensory neuropathy.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Question 85 of 257

Question Difficulty: Easy

Mr. X is complaining muscle weakness causing difficulty walking up stairs for 2 months. He also reported impotence and dry mouth, but there is no speech or swallowing difficulties. His symptoms worsen in the morning and improve gradually through the day.

Examination shows proximal muscle weakness. Reflexes are absent but are obtainable after exertion. Plantar responses are flexor. There are no sensory problems, ptosis or ophthalmoplegia.

What is the most likely diagnosis?

○ **Paraneoplastic neuropathy**
○ **Vasculitis neuropathy**
○ **Lambert-Eaton myasthenic**
● **Myasthenia gravis**
○ **Metabolic myopathy**

Description

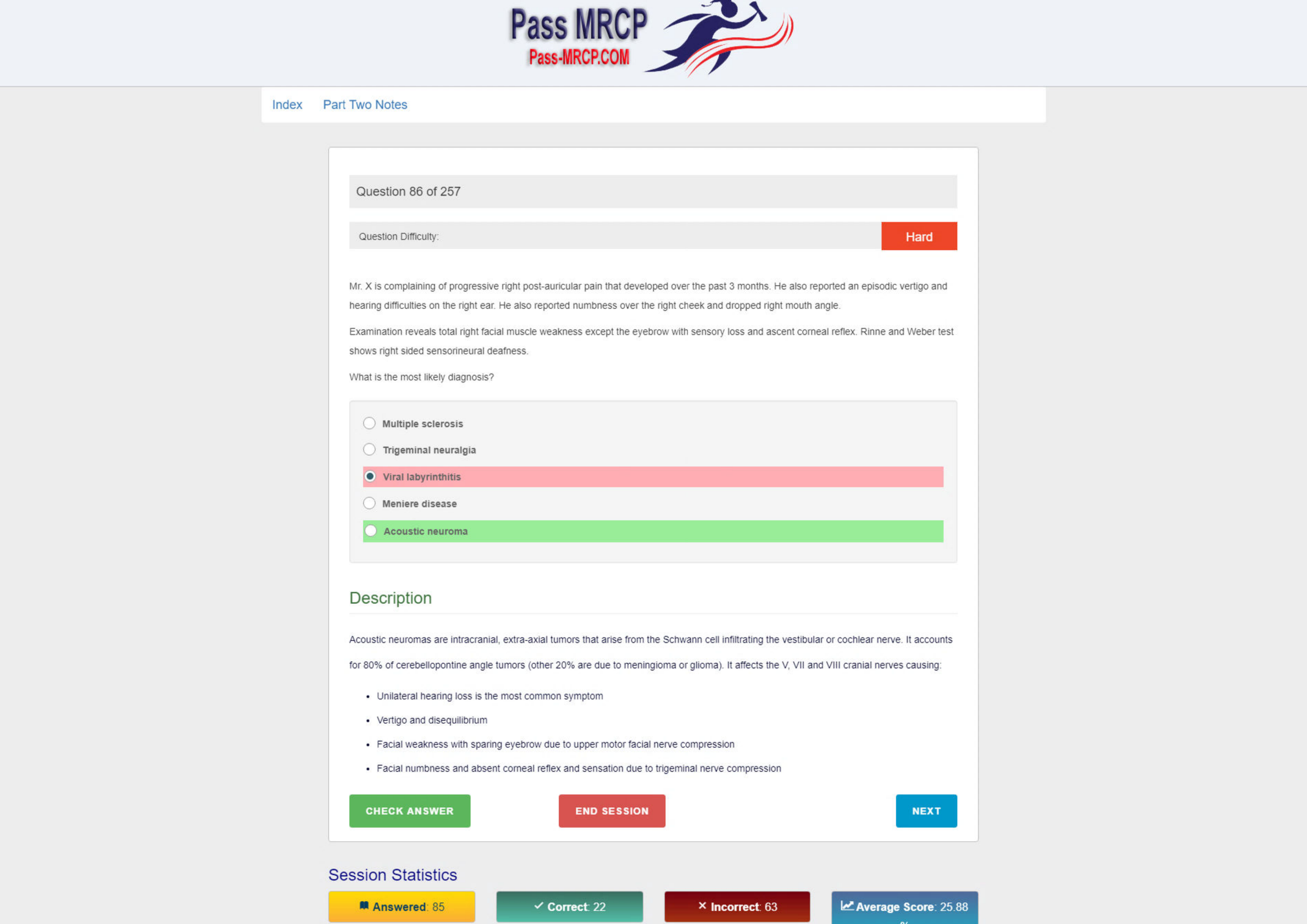
Lambert-Eaton myasthenic syndrome (LEMS) is a rare autoimmune disorder that is characterized by muscle weakness of the limbs. Key point differentiation between LEMS and myasthenia gravis include:

- Repeated muscle contractions lead to increased muscle strength
- Hyporeflexia
- Autonomic symptoms
- Ophthalmoplegia and ptosis are not common
- No sensory symptoms

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 84
✓ Correct: 22
✕ Incorrect: 62
Average Score: 26.19



Question 86 of 257

Question Difficulty: Hard

Mr. X is complaining of progressive right post-auricular pain that developed over the past 3 months. He also reported an episodic vertigo and hearing difficulties on the right ear. He also reported numbness over the right cheek and dropped right mouth angle.

Examination reveals total right facial muscle weakness except the eyebrow with sensory loss and ascent corneal reflex. Rinne and Weber test shows right sided sensorineural deafness.

What is the most likely diagnosis?

○ **Multiple sclerosis**
○ **Trigeminal neuralgia**
● **Viral labyrinthitis**
○ **Meniere disease**
○ **Acoustic neuroma**

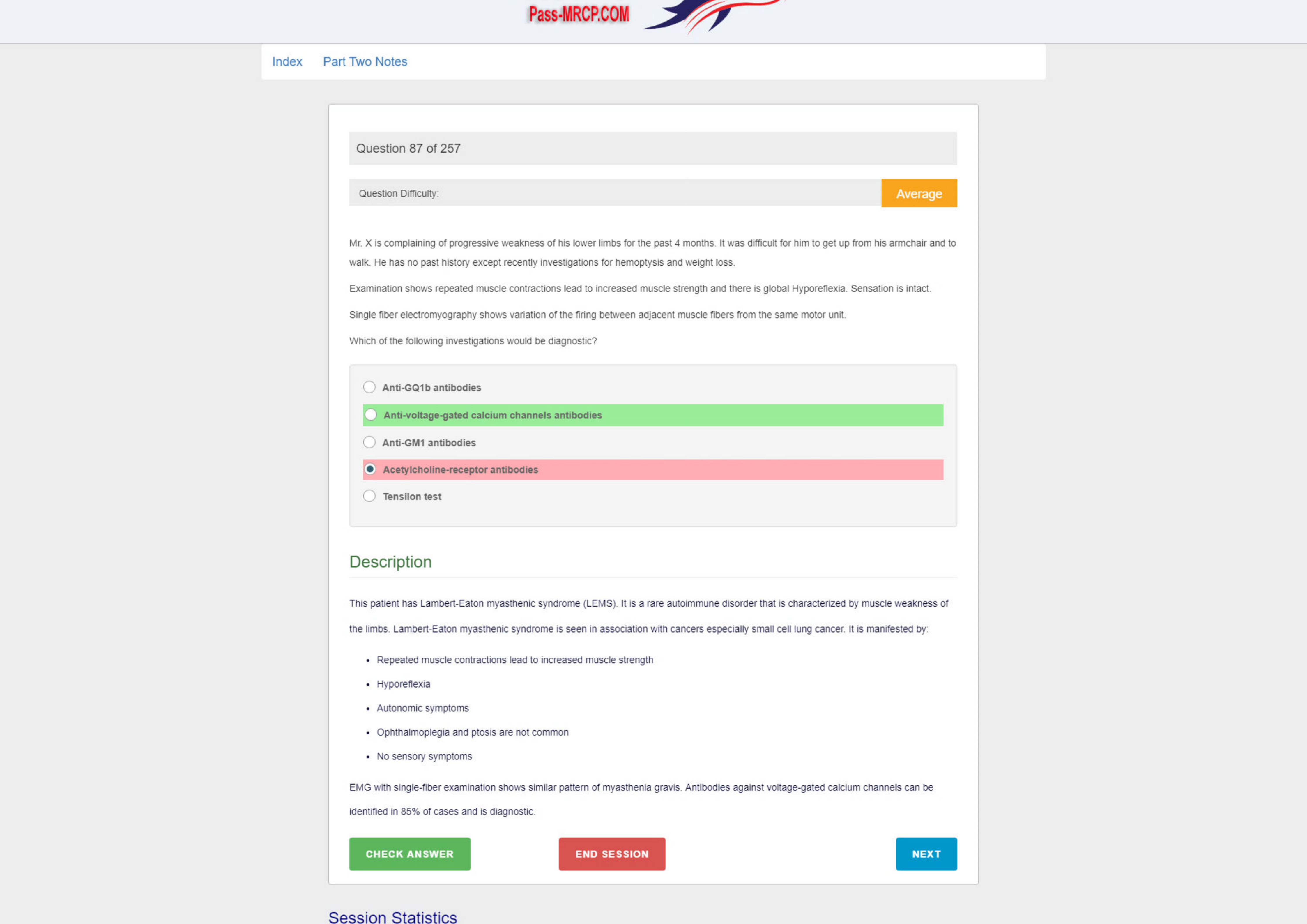
Description

Acoustic neuromas are intracranial, extra-axial tumors that arise from the Schwann cell infiltrating the vestibular or cochlear nerve. It accounts for 80% of cerebellopontine angle tumors (other 20% are due to meningioma or glioma). It affects the V, VII and VIII cranial nerves causing:

- Unilateral hearing loss is the most common symptom
- Vertigo and disequilibrium
- Facial weakness with sparing eyebrow due to upper motor facial nerve compression
- Facial numbness and absent corneal reflex and sensation due to trigeminal nerve compression

Session Statistics

Answered: 85
✓ Correct: 22
✕ Incorrect: 63
Average Score: 25.88



Question 87 of 257

Question Difficulty: **Average**

Mr. X is complaining of progressive weakness of his lower limbs for the past 4 months. It was difficult for him to get up from his armchair and to walk. He has no past history except recently investigations for hemoptysis and weight loss.

Examination shows repeated muscle contractions lead to increased muscle strength and there is global Hyporeflexia. Sensation is intact.

Single fiber electromyography shows variation of the firing between adjacent muscle fibers from the same motor unit.

Which of the following investigations would be diagnostic?

○ **Anti-GQ1b antibodies**

○ **Anti-voltage-gated calcium channels antibodies**

○ **Anti-GM1 antibodies**

● **Acetylcholine-receptor antibodies**

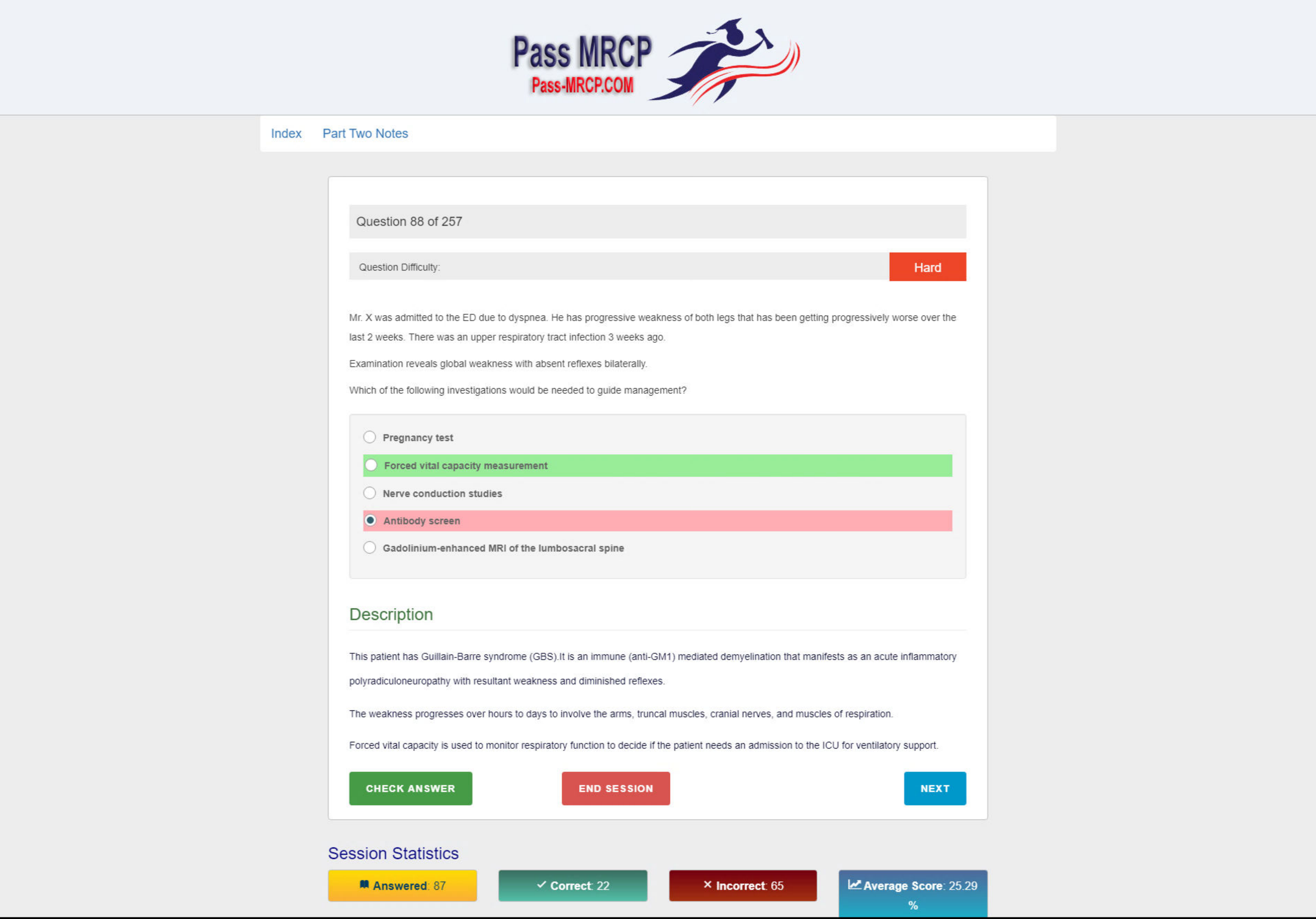
○ **Tensilon test**

Description

This patient has Lambert-Eaton myasthenic syndrome (LEMS). It is a rare autoimmune disorder that is characterized by muscle weakness of the limbs. Lambert-Eaton myasthenic syndrome is seen in association with cancers especially small cell lung cancer. It is manifested by:

- Repeated muscle contractions lead to increased muscle strength
- Hyporeflexia
- Autonomic symptoms
- Ophthalmoplegia and ptosis are not common
- No sensory symptoms

EMG with single-fiber examination shows similar pattern of myasthenia gravis. Antibodies against voltage-gated calcium channels can be identified in 85% of cases and is diagnostic.



Question 88 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to dyspnea. He has progressive weakness of both legs that has been getting progressively worse over the last 2 weeks. There was an upper respiratory tract infection 3 weeks ago.

Examination reveals global weakness with absent reflexes bilaterally.

Which of the following investigations would be needed to guide management?

- ○ **Pregnancy test**
- ○ **Forced vital capacity measurement**
- ○ **Nerve conduction studies**
- ● **Antibody screen**
- ○ **Gadolinium-enhanced MRI of the lumbosacral spine**

Description

This patient has Guillain-Barre syndrome (GBS).It is an immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

The weakness progresses over hours to days to involve the arms, truncal muscles, cranial nerves, and muscles of respiration.

Forced vital capacity is used to monitor respiratory function to decide if the patient needs an admission to the ICU for ventilatory support.

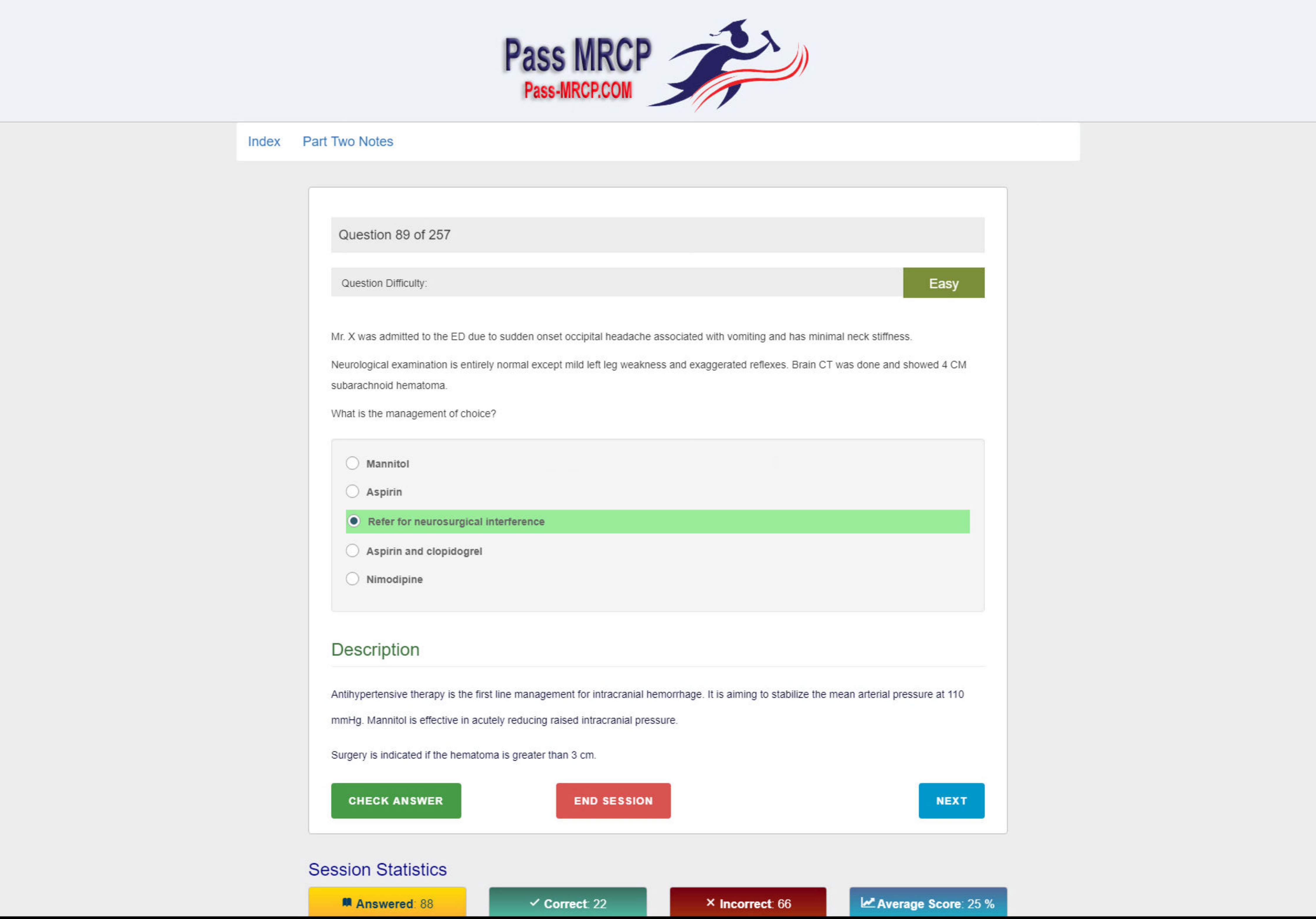
Session Statistics

Answered: 87

✓ **Correct**: 22

✕ **Incorrect**: 65

Average Score: 25.29 %



Question 89 of 257

Question Difficulty: **Easy**

Mr. X was admitted to the ED due to sudden onset occipital headache associated with vomiting and has minimal neck stiffness.

Neurological examination is entirely normal except mild left leg weakness and exaggerated reflexes. Brain CT was done and showed 4 CM subarachnoid hematoma.

What is the management of choice?

○ **Mannitol**
○ **Aspirin**
● **Refer for neurosurgical interference**
○ **Aspirin and clopidogrel**
○ **Nimodipine**

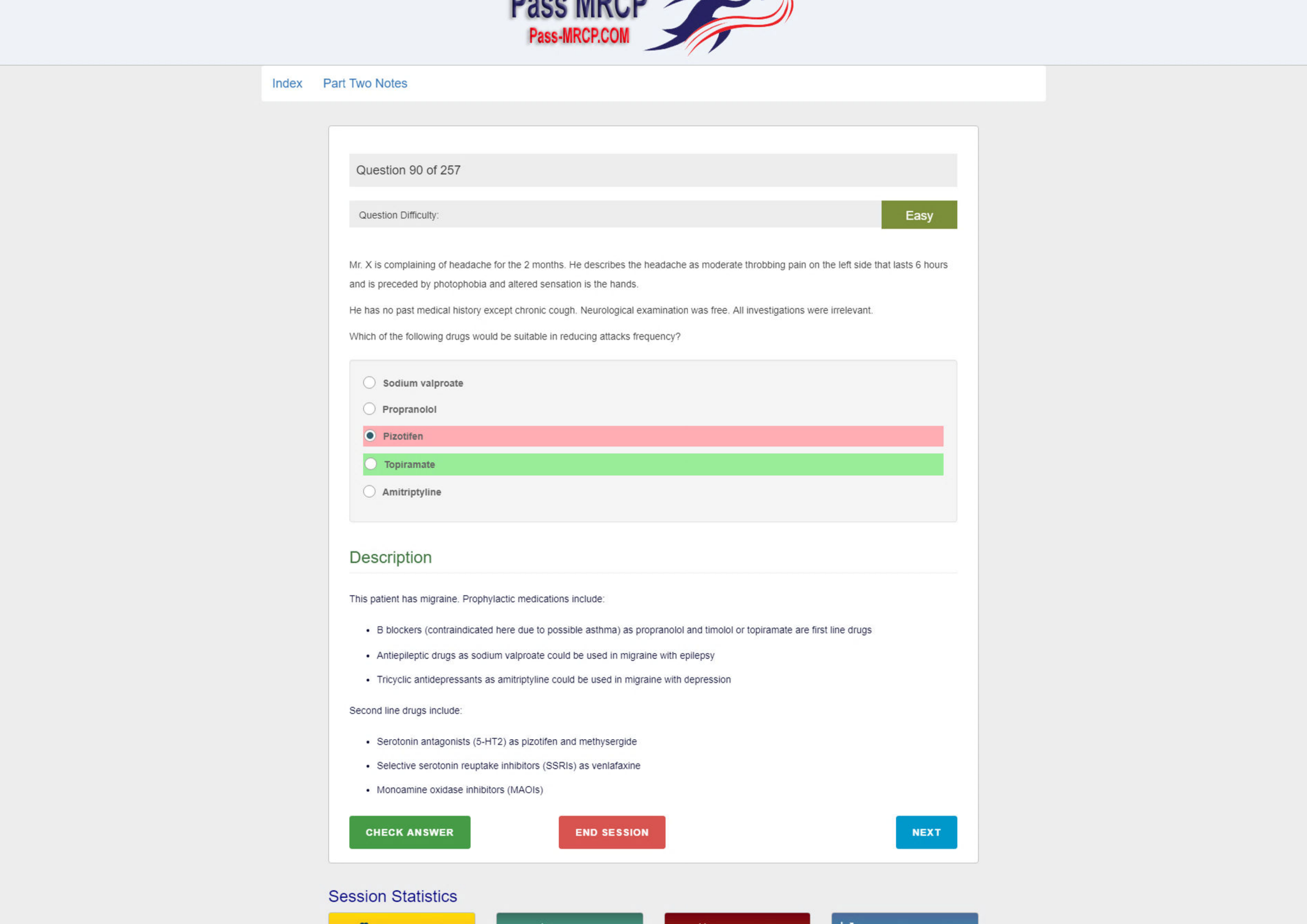
Description

Antihypertensive therapy is the first line management for intracranial hemorrhage. It is aiming to stabilize the mean arterial pressure at 110 mmHg. Mannitol is effective in acutely reducing raised intracranial pressure.

Surgery is indicated if the hematoma is greater than 3 cm.

Session Statistics

Answered: 88
✓ **Correct**: 22
✕ **Incorrect**: 66
Average Score: 25 %



Question 90 of 257

Question Difficulty: Easy

Mr. X is complaining of headache for the 2 months. He describes the headache as moderate throbbing pain on the left side that lasts 6 hours and is preceded by photophobia and altered sensation is the hands.

He has no past medical history except chronic cough. Neurological examination was free. All investigations were irrelevant.

Which of the following drugs would be suitable in reducing attacks frequency?

○ Sodium valproate
○ Propranolol
● Pizotifen
○ Topiramate
○ Amitriptyline

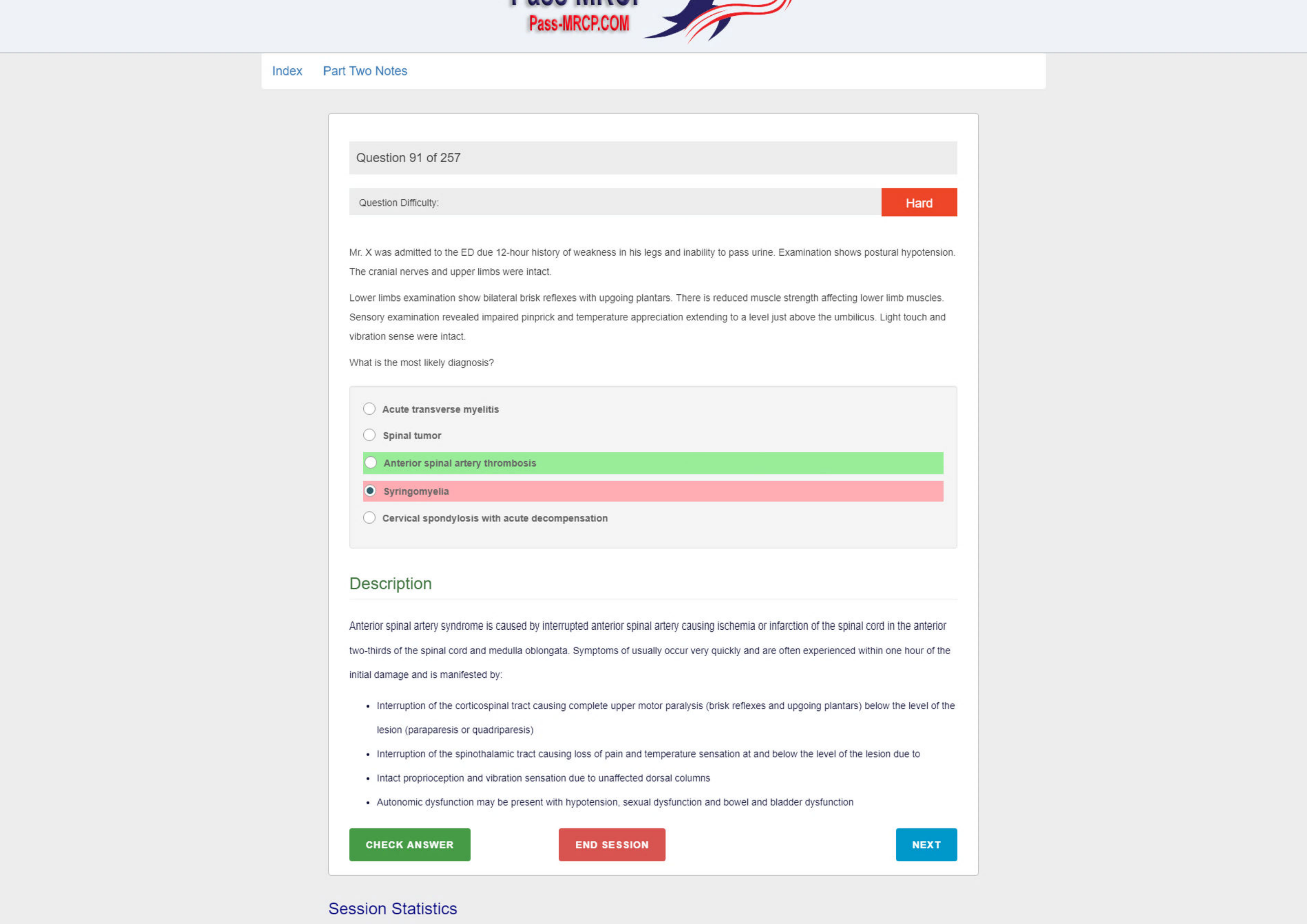
Description

This patient has migraine. Prophylactic medications include:

- B blockers (contraindicated here due to possible asthma) as propranolol and timolol or topiramate are first line drugs
- Antiepileptic drugs as sodium valproate could be used in migraine with epilepsy
- Tricyclic antidepressants as amitriptyline could be used in migraine with depression

Second line drugs include:

- Serotonin antagonists (5-HT2) as pizotifen and methysergide
- Selective serotonin reuptake inhibitors (SSRIs) as venlafaxine
- Monoamine oxidase inhibitors (MAOIs)



Question 91 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED due 12-hour history of weakness in his legs and inability to pass urine. Examination shows postural hypotension. The cranial nerves and upper limbs were intact.

Lower limbs examination show bilateral brisk reflexes with upgoing plantars. There is reduced muscle strength affecting lower limb muscles. Sensory examination revealed impaired pinprick and temperature appreciation extending to a level just above the umbilicus. Light touch and vibration sense were intact.

What is the most likely diagnosis?

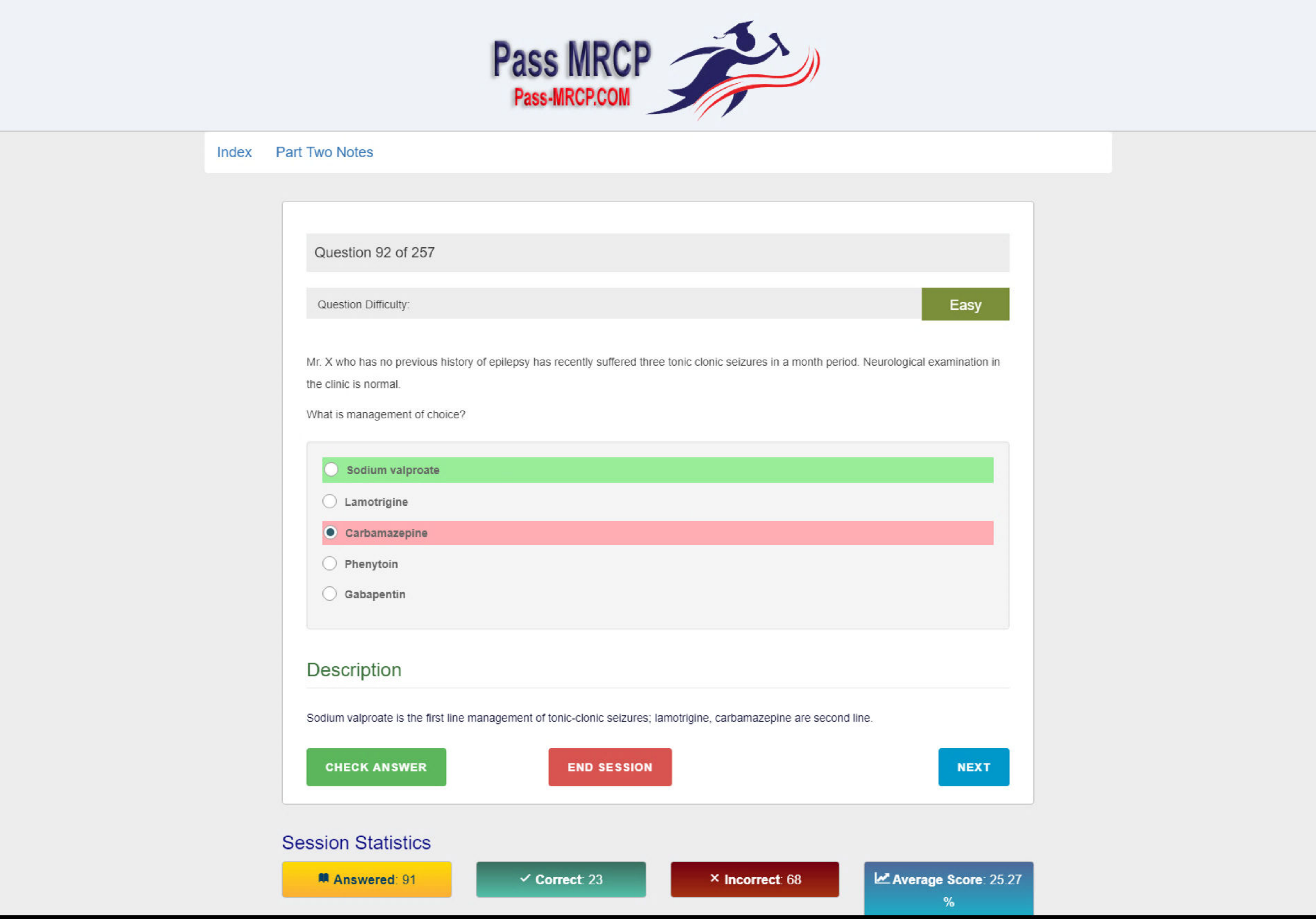
○ **Acute transverse myelitis**
○ **Spinal tumor**
○ **Anterior spinal artery thrombosis**
● **Syringomyelia**
○ **Cervical spondylosis with acute decompensation**

Description

Anterior spinal artery syndrome is caused by interrupted anterior spinal artery causing ischemia or infarction of the spinal cord in the anterior two-thirds of the spinal cord and medulla oblongata. Symptoms of usually occur very quickly and are often experienced within one hour of the initial damage and is manifested by:

- Interruption of the corticospinal tract causing complete upper motor paralysis (brisk reflexes and upgoing plantars) below the level of the lesion (paraparesis or quadriparesis)
- Interruption of the spinothalamic tract causing loss of pain and temperature sensation at and below the level of the lesion due to
- Intact proprioception and vibration sensation due to unaffected dorsal columns
- Autonomic dysfunction may be present with hypotension, sexual dysfunction and bowel and bladder dysfunction

Session Statistics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Question Difficulty: Easy

Mr. X who has no previous history of epilepsy has recently suffered three tonic clonic seizures in a month period. Neurological examination in the clinic is normal.

What is management of choice?

- ○ Sodium valproate
- ○ Lamotrigine
- ● Carbamazepine
- ○ Phenytoin
- ○ Gabapentin

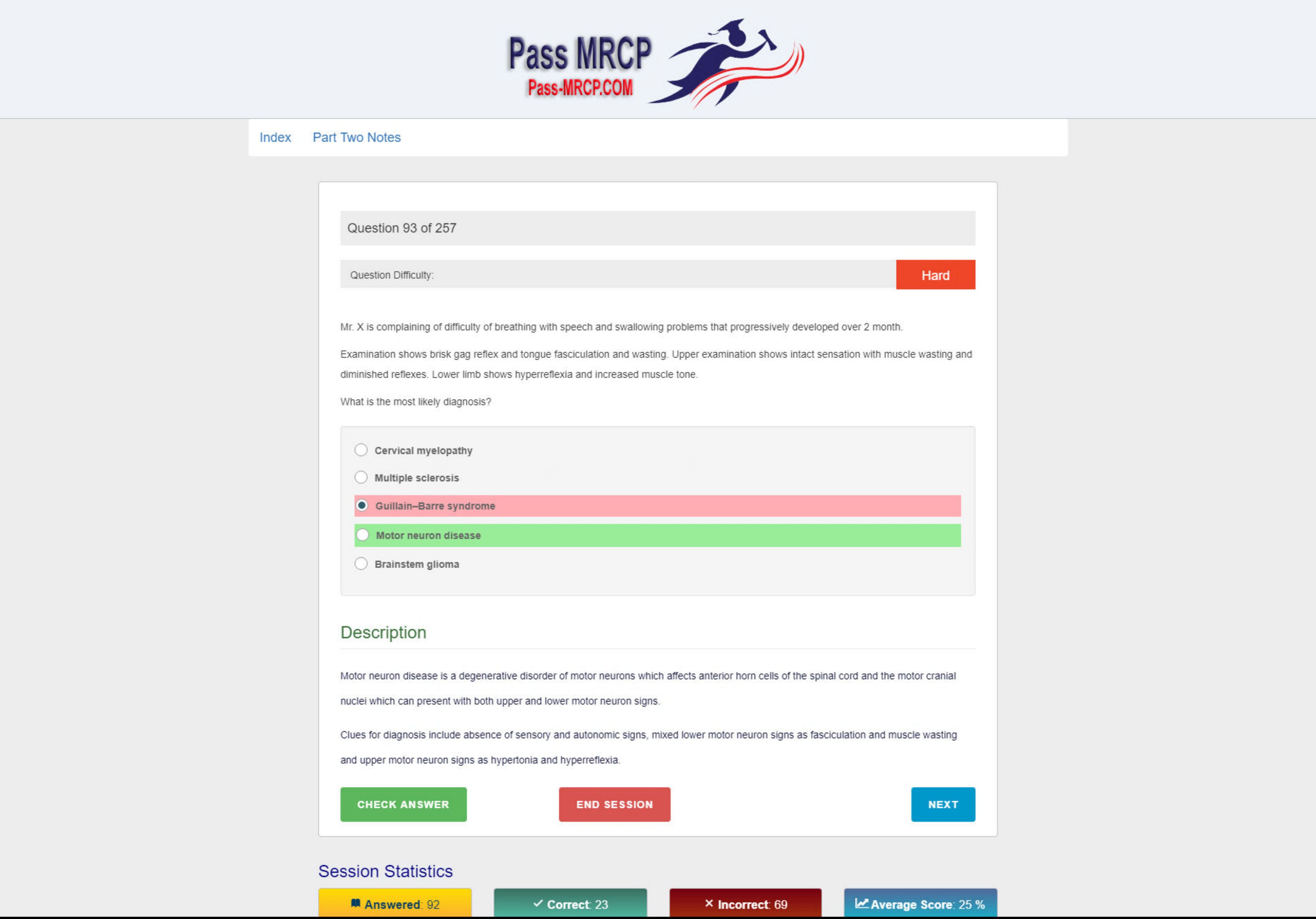
Description

Sodium valproate is the first line management of tonic-clonic seizures; lamotrigine, carbamazepine are second line.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 91
Correct: 23
Incorrect: 68
Average Score: 25.27 %



Question 93 of 257

Question Difficulty: **Hard**

Mr. X is complaining of difficulty of breathing with speech and swallowing problems that progressively developed over 2 month.

Examination shows brisk gag reflex and tongue fasciculation and wasting. Upper examination shows intact sensation with muscle wasting and diminished reflexes. Lower limb shows hyperreflexia and increased muscle tone.

What is the most likely diagnosis?

- ○ **Cervical myelopathy**
- ○ **Multiple sclerosis**
- ● **Guillain–Barre syndrome**
- ○ **Motor neuron disease**
- ○ **Brainstem glioma**

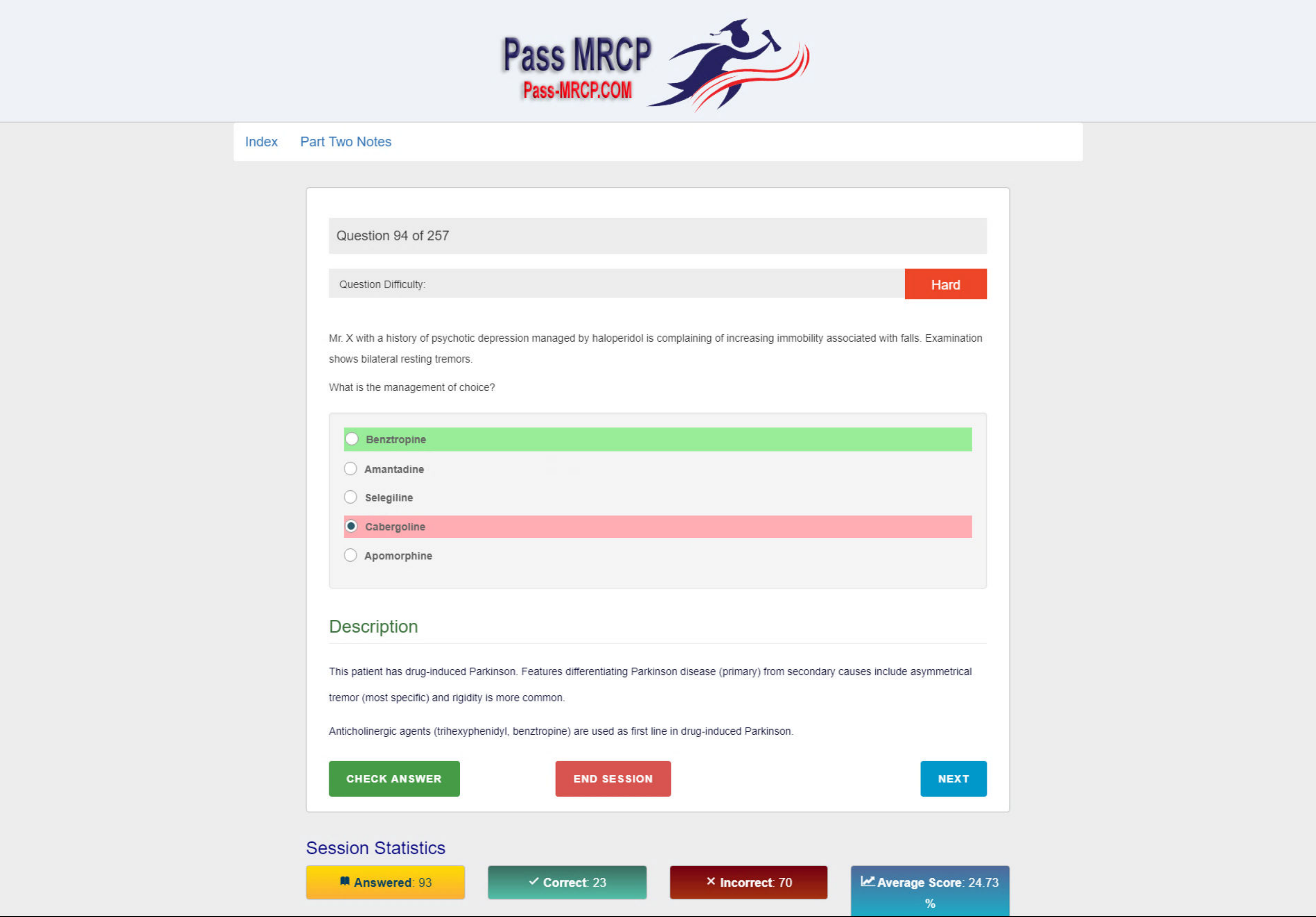
Description

Motor neuron disease is a degenerative disorder of motor neurons which affects anterior horn cells of the spinal cord and the motor cranial nuclei which can present with both upper and lower motor neuron signs.

Clues for diagnosis include absence of sensory and autonomic signs, mixed lower motor neuron signs as fasciculation and muscle wasting and upper motor neuron signs as hypertonia and hyperreflexia.

Session Statistics

Answered: 92
✓ **Correct**: 23
✕ **Incorrect**: 69
Average Score: 25 %



Question 94 of 257

Question Difficulty: **Hard**

Mr. X with a history of psychotic depression managed by haloperidol is complaining of increasing immobility associated with falls. Examination shows bilateral resting tremors.

What is the management of choice?

- ○ **Benztropine**
- ○ **Amantadine**
- ○ **Selegiline**
- ● **Cabergoline**
- ○ **Apomorphine**

Description

This patient has drug-induced Parkinson. Features differentiating Parkinson disease (primary) from secondary causes include asymmetrical tremor (most specific) and rigidity is more common.

Anticholinergic agents (trihexyphenidyl, benztropine) are used as first line in drug-induced Parkinson.

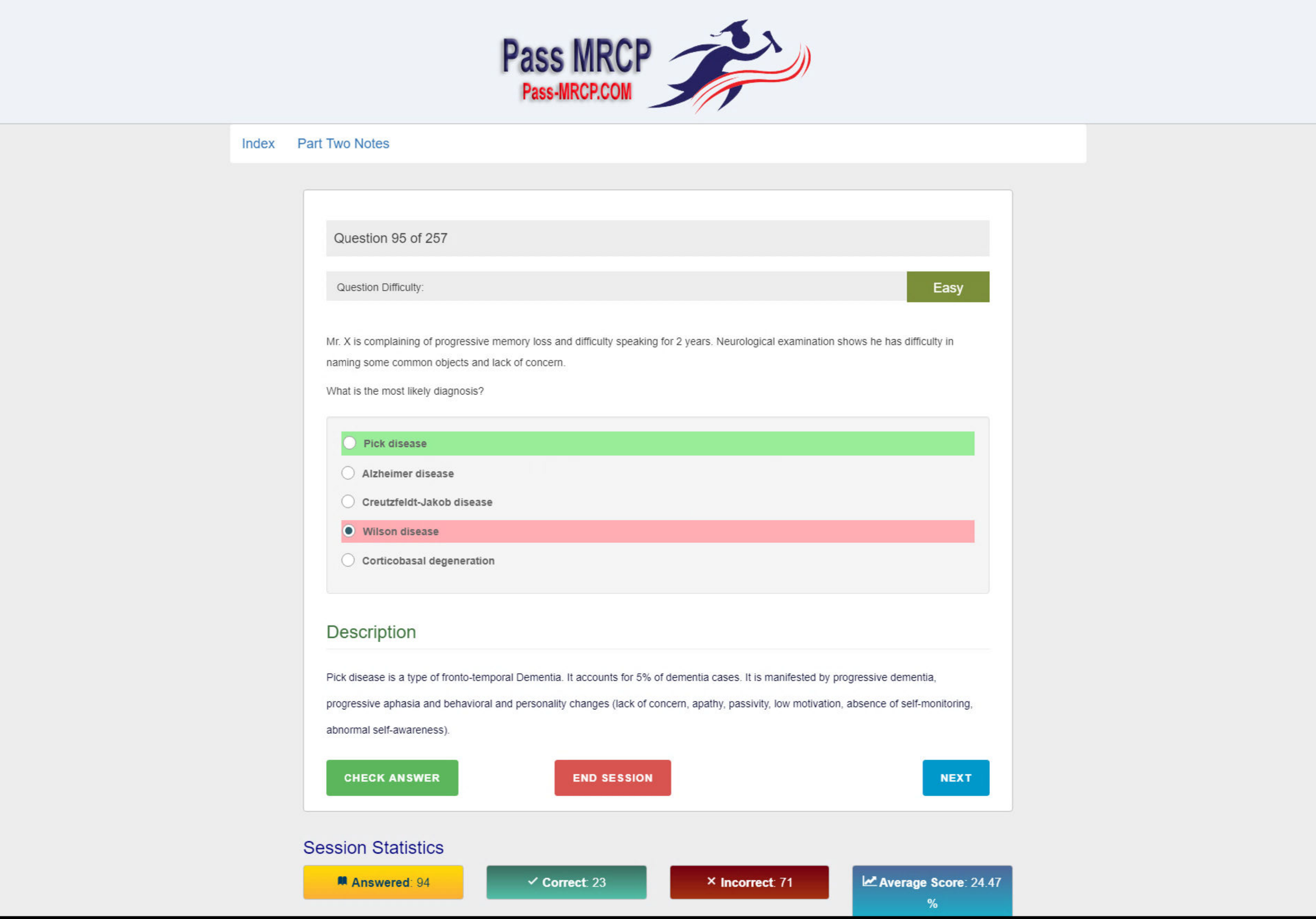
Session Statistics

Answered: 93

✓ **Correct**: 23

✕ **Incorrect**: 70

Average Score: 24.73 %



Question 95 of 257

Question Difficulty: Easy

Mr. X is complaining of progressive memory loss and difficulty speaking for 2 years. Neurological examination shows he has difficulty in naming some common objects and lack of concern.

What is the most likely diagnosis?

- ○ Pick disease
- ○ Alzheimer disease
- ○ Creutzfeldt-Jakob disease
- ● Wilson disease
- ○ Corticobasal degeneration

Description

Pick disease is a type of fronto-temporal Dementia. It accounts for 5% of dementia cases. It is manifested by progressive dementia, progressive aphasia and behavioral and personality changes (lack of concern, apathy, passivity, low motivation, absence of self-monitoring, abnormal self-awareness).

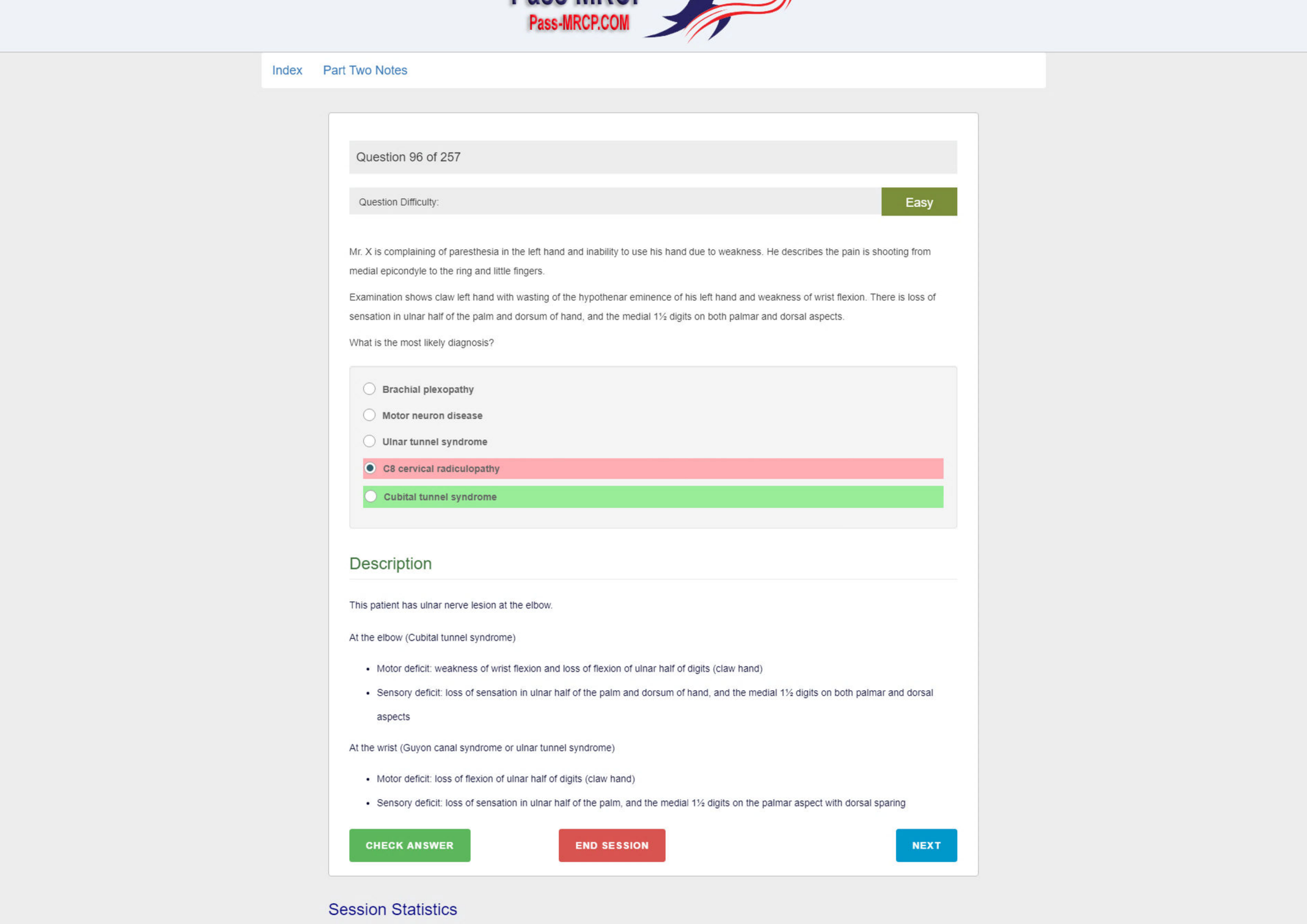
Session Statistics

Answered: 94

✓ Correct: 23

× Incorrect: 71

Average Score: 24.47 %



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Question Difficulty: **Easy**

Mr. X is complaining of paresthesia in the left hand and inability to use his hand due to weakness. He describes the pain is shooting from medial epicondyle to the ring and little fingers.

Examination shows claw left hand with wasting of the hypothenar eminence of his left hand and weakness of wrist flexion. There is loss of sensation in ulnar half of the palm and dorsum of hand, and the medial 1½ digits on both palmar and dorsal aspects.

What is the most likely diagnosis?

○ **Brachial plexopathy**
○ **Motor neuron disease**
○ **Ulnar tunnel syndrome**
● **C8 cervical radiculopathy**
○ **Cubital tunnel syndrome**

Description

This patient has ulnar nerve lesion at the elbow.

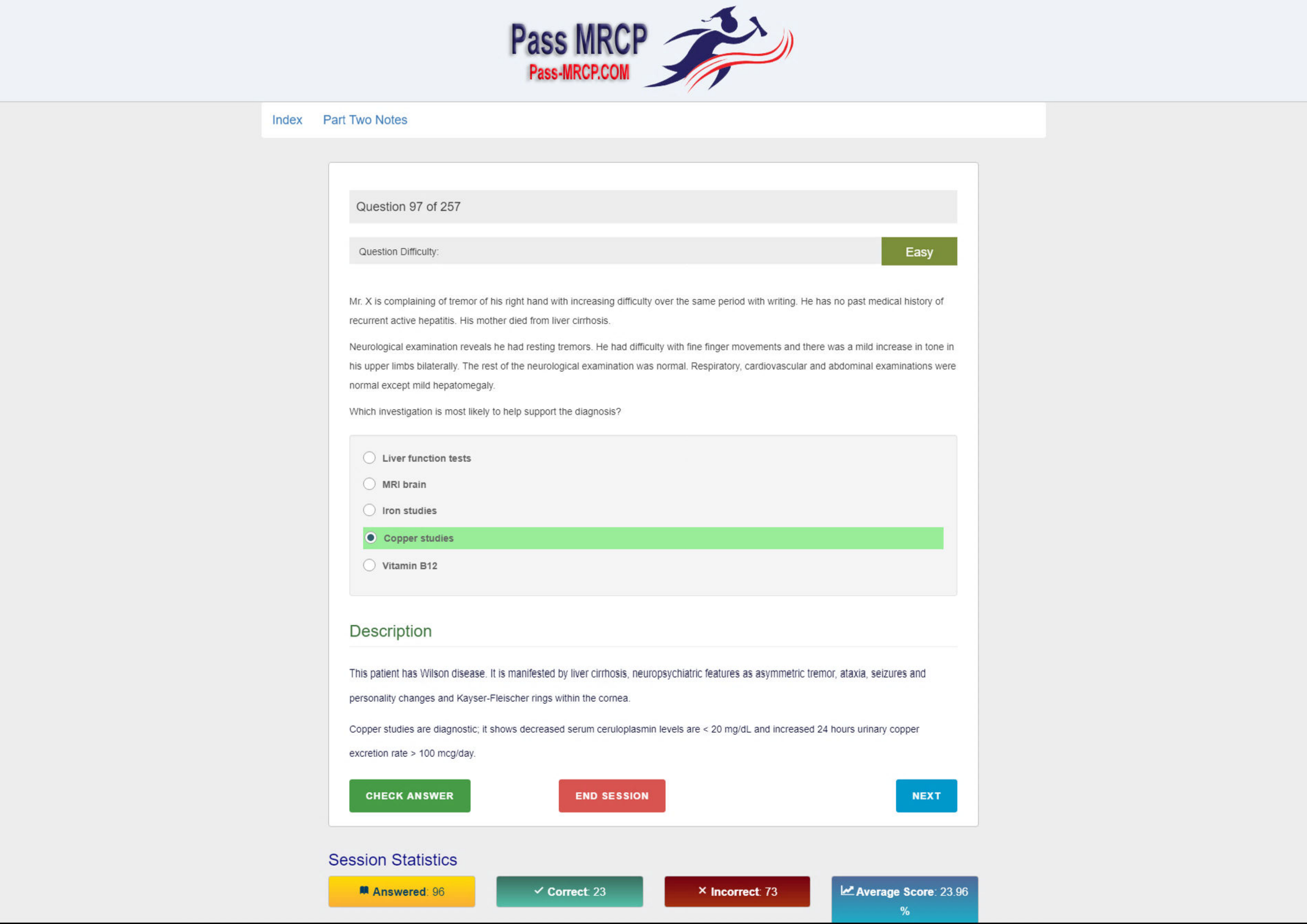
At the elbow (Cubital tunnel syndrome)

- Motor deficit: weakness of wrist flexion and loss of flexion of ulnar half of digits (claw hand)
- Sensory deficit: loss of sensation in ulnar half of the palm and dorsum of hand, and the medial 1½ digits on both palmar and dorsal aspects

At the wrist (Guyon canal syndrome or ulnar tunnel syndrome)

- Motor deficit: loss of flexion of ulnar half of digits (claw hand)
- Sensory deficit: loss of sensation in ulnar half of the palm, and the medial 1½ digits on the palmar aspect with dorsal sparing

Session Statistics



Question 97 of 257

Question Difficulty: Easy

Mr. X is complaining of tremor of his right hand with increasing difficulty over the same period with writing. He has no past medical history of recurrent active hepatitis. His mother died from liver cirrhosis.

Neurological examination reveals he had resting tremors. He had difficulty with fine finger movements and there was a mild increase in tone in his upper limbs bilaterally. The rest of the neurological examination was normal. Respiratory, cardiovascular and abdominal examinations were normal except mild hepatomegaly.

Which investigation is most likely to help support the diagnosis?

○ **Liver function tests**
○ **MRI brain**
○ **Iron studies**
● **Copper studies**
○ **Vitamin B12**

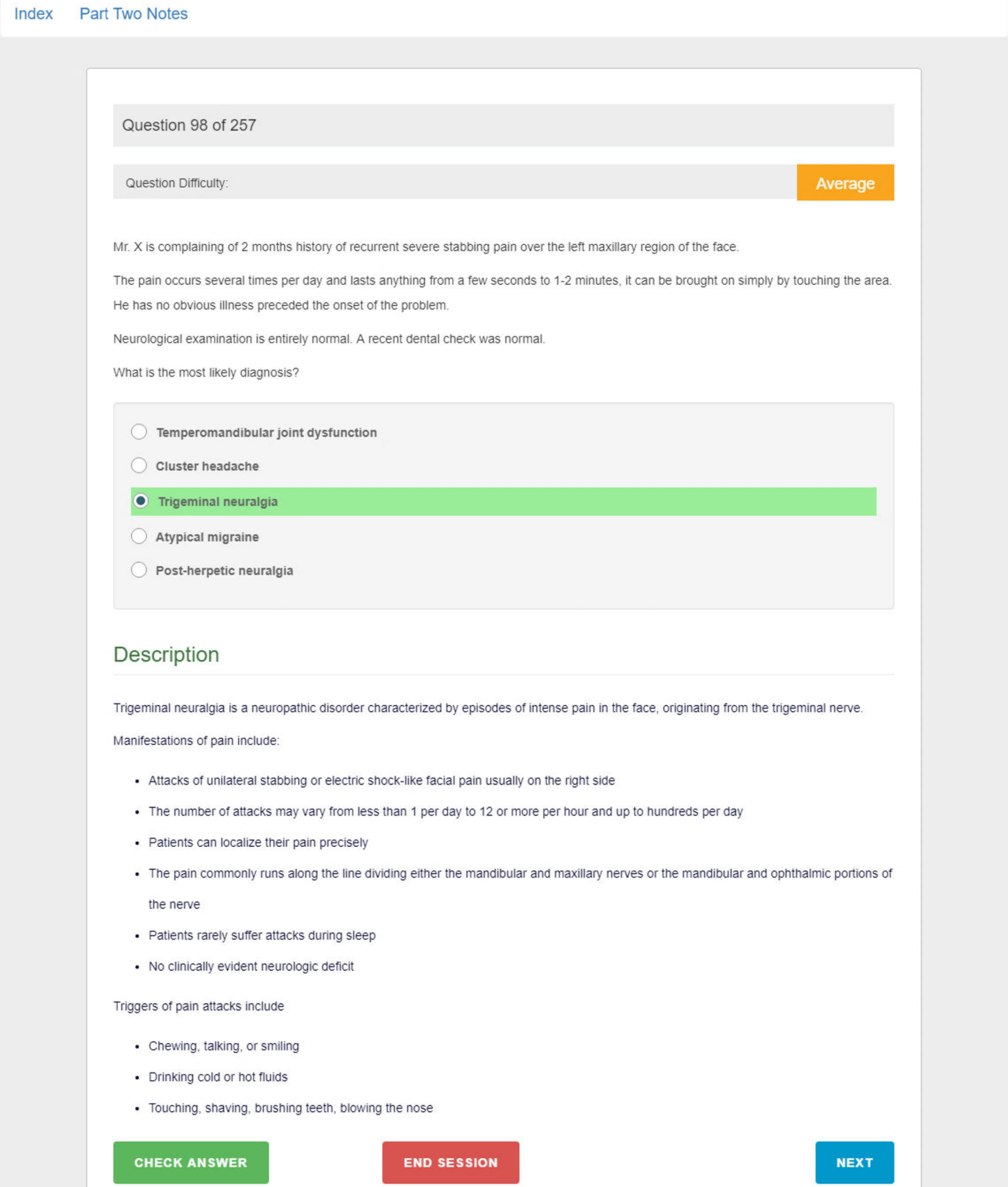
Description

This patient has Wilson disease. It is manifested by liver cirrhosis, neuropsychiatric features as asymmetric tremor, ataxia, seizures and personality changes and Kayser-Fleischer rings within the cornea.

Copper studies are diagnostic; it shows decreased serum ceruloplasmin levels are < 20 mg/dL and increased 24 hours urinary copper excretion rate > 100 mcg/day.

Session Statistics

Answered: 96
✓ **Correct**: 23
× **Incorrect**: 73
Average Score: 23.96 %



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Question Difficulty: **Average**

Mr. X is complaining of 2 months history of recurrent severe stabbing pain over the left maxillary region of the face.

The pain occurs several times per day and lasts anything from a few seconds to 1-2 minutes, it can be brought on simply by touching the area. He has no obvious illness preceded the onset of the problem.

Neurological examination is entirely normal. A recent dental check was normal.

What is the most likely diagnosis?

○ **Temperomandibular joint dysfunction**
○ **Cluster headache**
● **Trigeminal neuralgia**
○ **Atypical migraine**
○ **Post-herpetic neuralgia**

Description

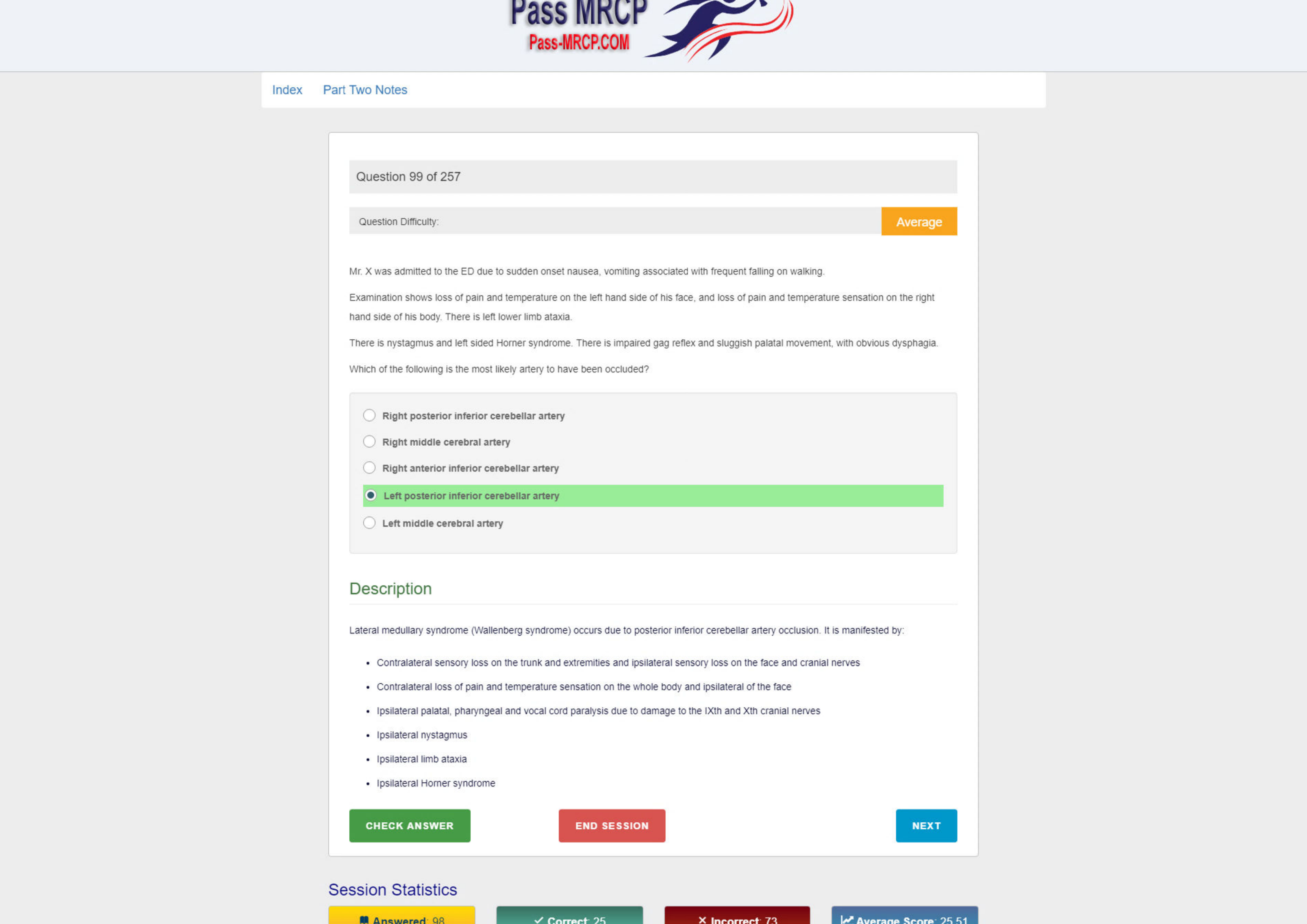
Trigeminal neuralgia is a neuropathic disorder characterized by episodes of intense pain in the face, originating from the trigeminal nerve.

Manifestations of pain include:

- Attacks of unilateral stabbing or electric shock-like facial pain usually on the right side
- The number of attacks may vary from less than 1 per day to 12 or more per hour and up to hundreds per day
- Patients can localize their pain precisely
- The pain commonly runs along the line dividing either the mandibular and maxillary nerves or the mandibular and ophthalmic portions of the nerve
- Patients rarely suffer attacks during sleep
- No clinically evident neurologic deficit

Triggers of pain attacks include

- Chewing, talking, or smiling
- Drinking cold or hot fluids
- Touching, shaving, brushing teeth, blowing the nose



Question 99 of 257

Question Difficulty: Average

Mr. X was admitted to the ED due to sudden onset nausea, vomiting associated with frequent falling on walking.

Examination shows loss of pain and temperature on the left hand side of his face, and loss of pain and temperature sensation on the right hand side of his body. There is left lower limb ataxia.

There is nystagmus and left sided Horner syndrome. There is impaired gag reflex and sluggish palatal movement, with obvious dysphagia.

Which of the following is the most likely artery to have been occluded?

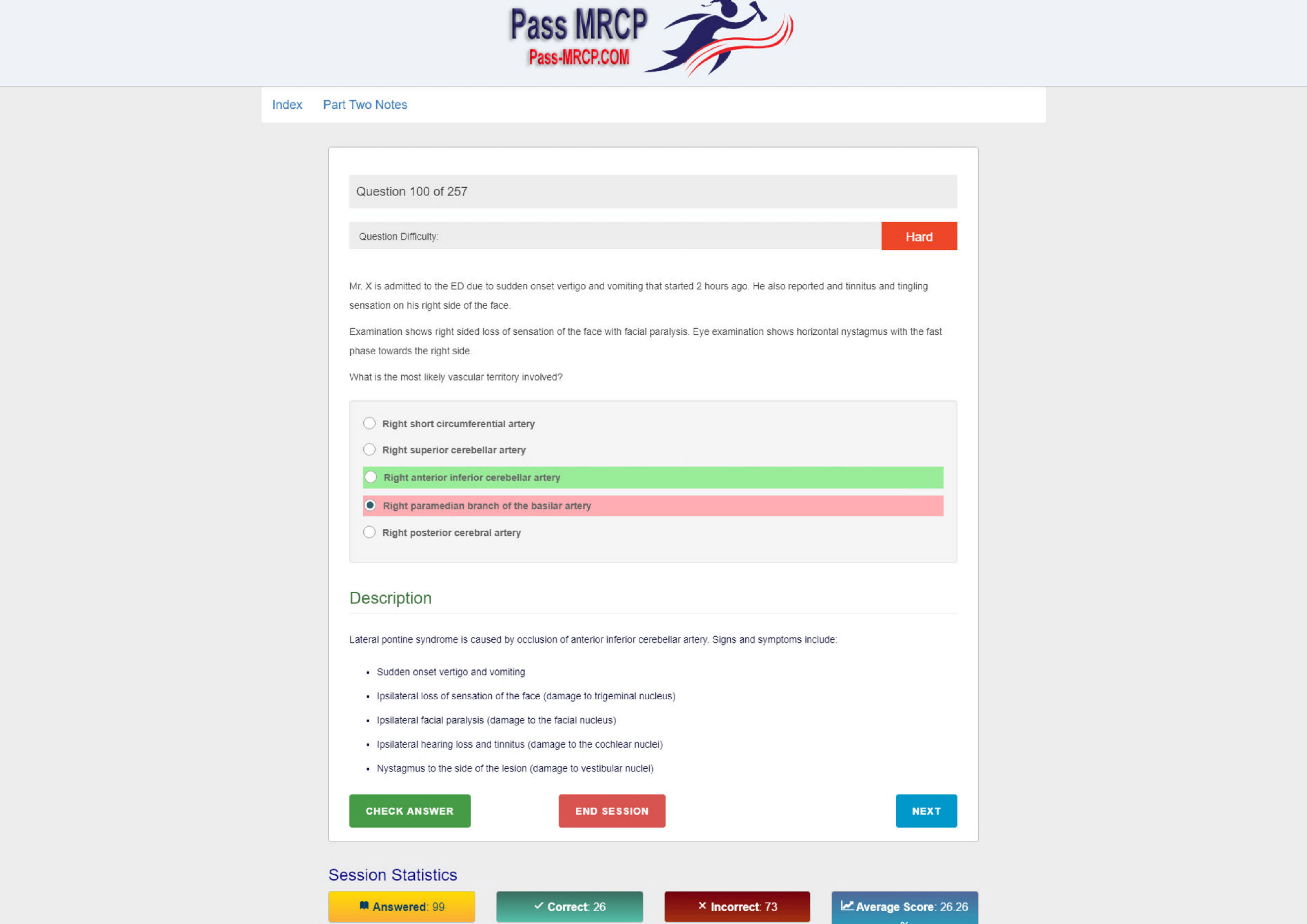
○ **Right posterior inferior cerebellar artery**
○ **Right middle cerebral artery**
○ **Right anterior inferior cerebellar artery**
● **Left posterior inferior cerebellar artery**
○ **Left middle cerebral artery**

Description

Lateral medullary syndrome (Wallenberg syndrome) occurs due to posterior inferior cerebellar artery occlusion. It is manifested by:

- Contralateral sensory loss on the trunk and extremities and ipsilateral sensory loss on the face and cranial nerves
- Contralateral loss of pain and temperature sensation on the whole body and ipsilateral of the face
- Ipsilateral palatal, pharyngeal and vocal cord paralysis due to damage to the IXth and Xth cranial nerves
- Ipsilateral nystagmus
- Ipsilateral limb ataxia
- Ipsilateral Horner syndrome

Session Statistics



Question 100 of 257

Question Difficulty: **Hard**

Mr. X is admitted to the ED due to sudden onset vertigo and vomiting that started 2 hours ago. He also reported and tinnitus and tingling sensation on his right side of the face.

Examination shows right sided loss of sensation of the face with facial paralysis. Eye examination shows horizontal nystagmus with the fast phase towards the right side.

What is the most likely vascular territory involved?

○ **Right short circumferential artery**
○ **Right superior cerebellar artery**
○ **Right anterior inferior cerebellar artery**
● **Right paramedian branch of the basilar artery**
○ **Right posterior cerebral artery**

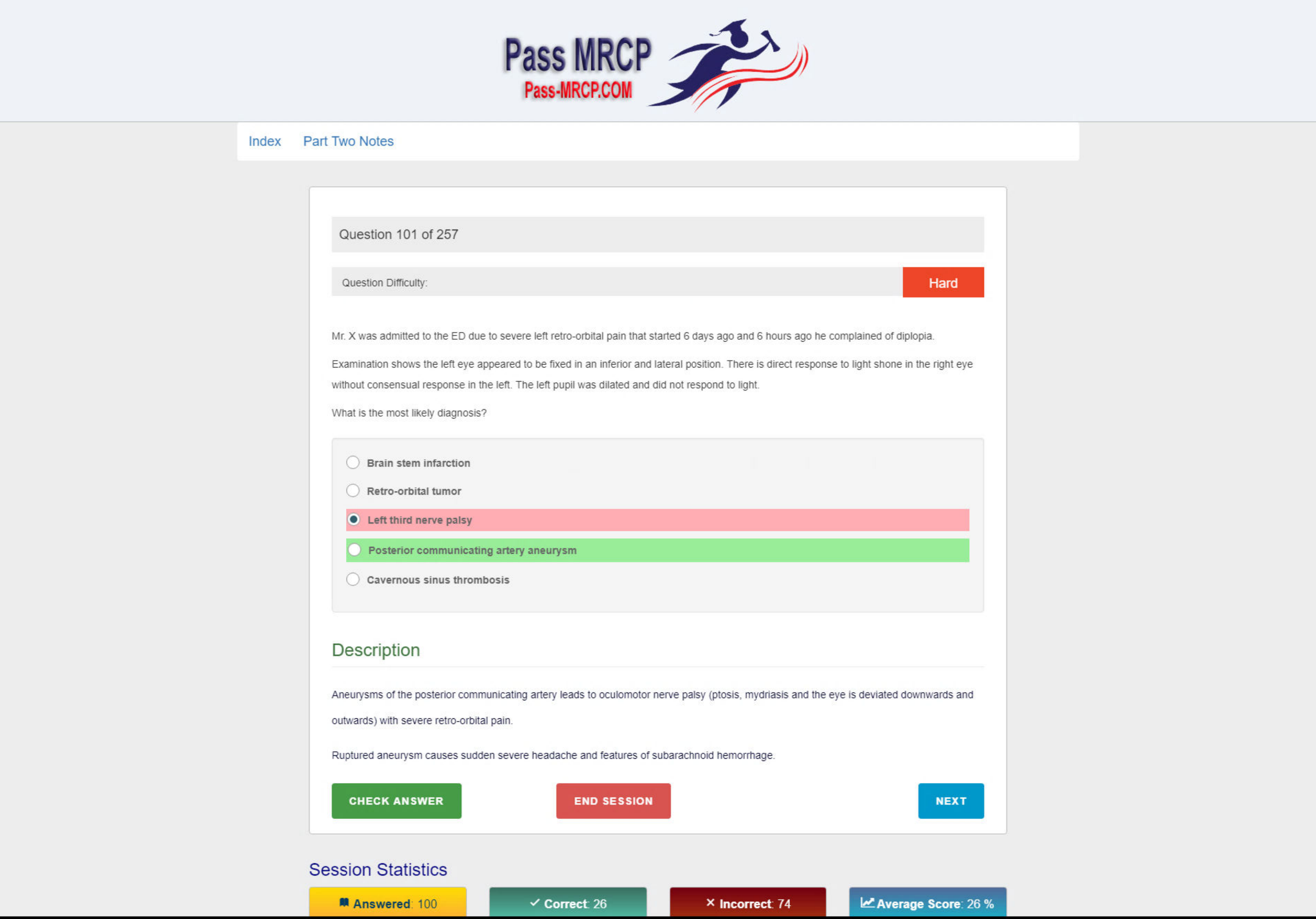
Description

Lateral pontine syndrome is caused by occlusion of anterior inferior cerebellar artery. Signs and symptoms include:

- Sudden onset vertigo and vomiting
- Ipsilateral loss of sensation of the face (damage to trigeminal nucleus)
- Ipsilateral facial paralysis (damage to the facial nucleus)
- Ipsilateral hearing loss and tinnitus (damage to the cochlear nuclei)
- Nystagmus to the side of the lesion (damage to vestibular nuclei)

Session Statistics

Answered: 99
✓ **Correct**: 26
× **Incorrect**: 73
Average Score: 26.26



Question 101 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to severe left retro-orbital pain that started 6 days ago and 6 hours ago he complained of diplopia.

Examination shows the left eye appeared to be fixed in an inferior and lateral position. There is direct response to light shone in the right eye without consensual response in the left. The left pupil was dilated and did not respond to light.

What is the most likely diagnosis?

○ **Brain stem infarction**
○ **Retro-orbital tumor**
● **Left third nerve palsy**
○ **Posterior communicating artery aneurysm**
○ **Cavernous sinus thrombosis**

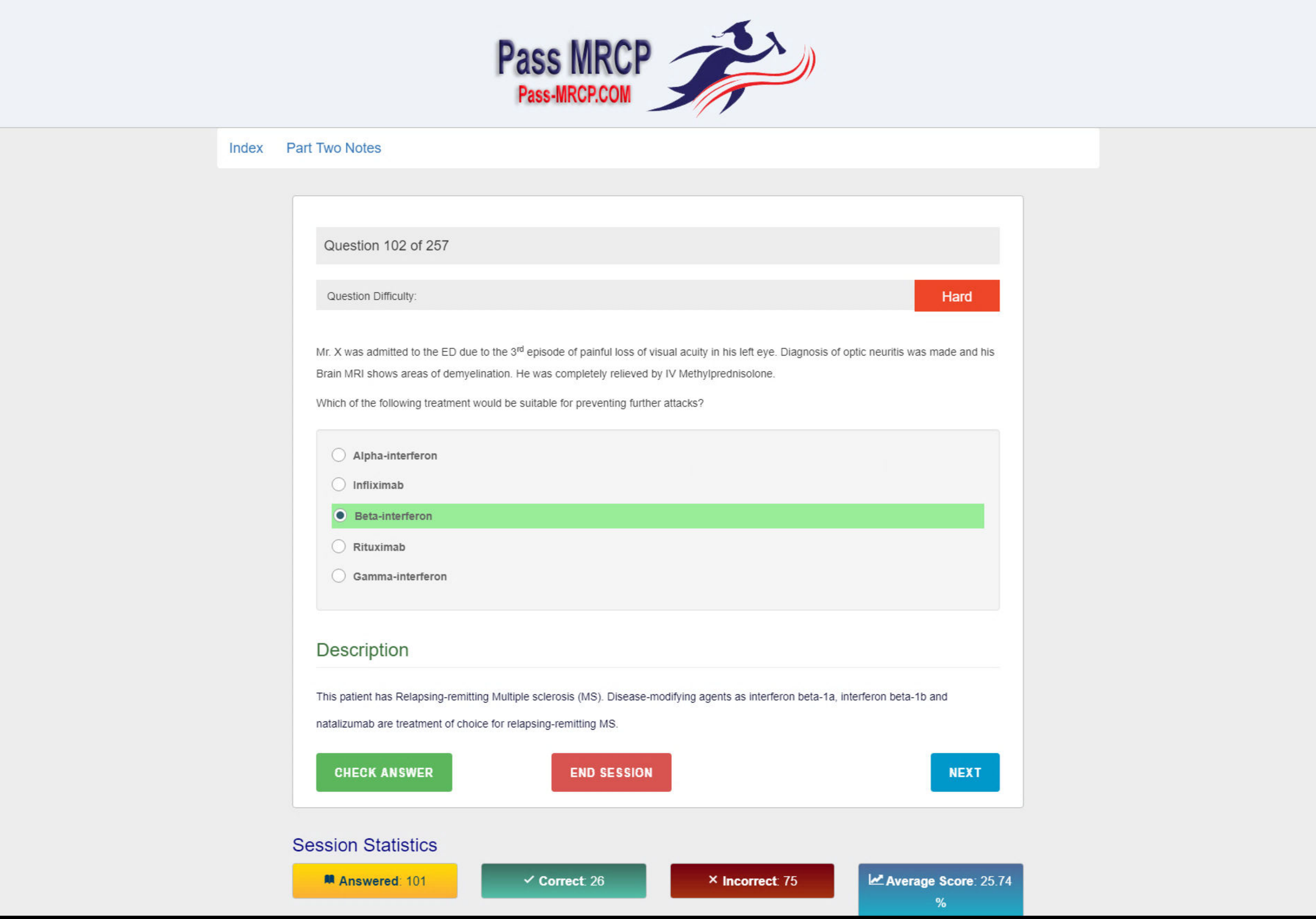
Description

Aneurysms of the posterior communicating artery leads to oculomotor nerve palsy (ptosis, mydriasis and the eye is deviated downwards and outwards) with severe retro-orbital pain.

Ruptured aneurysm causes sudden severe headache and features of subarachnoid hemorrhage.

Session Statistics

Answered: 100
✓ **Correct**: 26
✕ **Incorrect**: 74
Average Score: 26 %



Question 102 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to the 3rd episode of painful loss of visual acuity in his left eye. Diagnosis of optic neuritis was made and his Brain MRI shows areas of demyelination. He was completely relieved by IV Methylprednisolone.

Which of the following treatment would be suitable for preventing further attacks?

- ○ Alpha-interferon
- ○ Infliximab
- ● Beta-interferon
- ○ Rituximab
- ○ Gamma-interferon

Description

This patient has Relapsing-remitting Multiple sclerosis (MS). Disease-modifying agents as interferon beta-1a, interferon beta-1b and natalizumab are treatment of choice for relapsing-remitting MS.

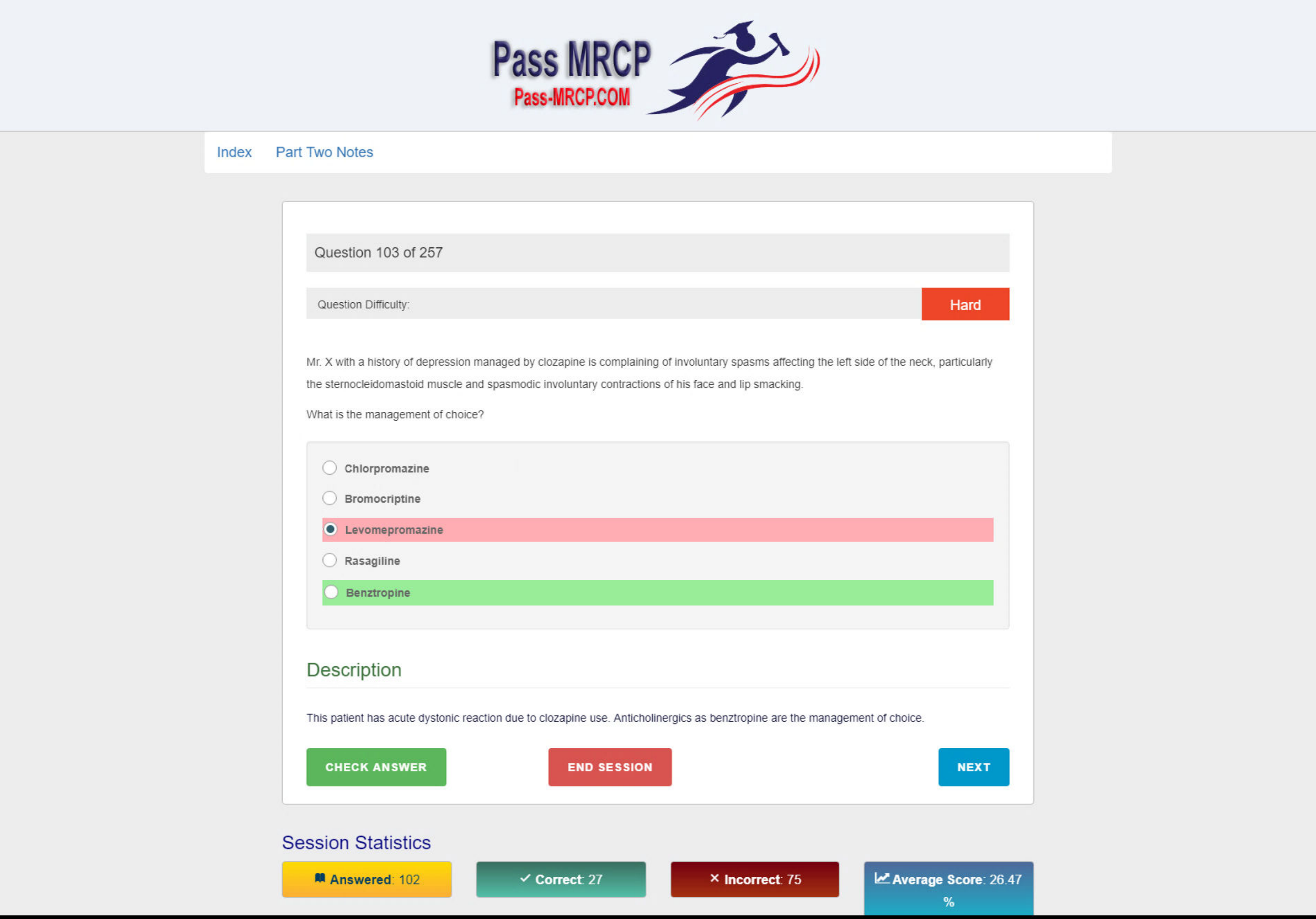
Session Statistics

Answered: 101

✓ Correct: 26

✕ Incorrect: 75

Average Score: 25.74 %



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Question Difficulty: Hard

Mr. X with a history of depression managed by clozapine is complaining of involuntary spasms affecting the left side of the neck, particularly the sternocleidomastoid muscle and spasmodic involuntary contractions of his face and lip smacking.

What is the management of choice?

- ○ **Chlorpromazine**
- ○ **Bromocriptine**
- ● **Levomepromazine**
- ○ **Rasagiline**
- ○ **Benztropine**

Description

This patient has acute dystonic reaction due to clozapine use. Anticholinergics as benztropine are the management of choice.

CHECK ANSWER
END SESSION
NEXT

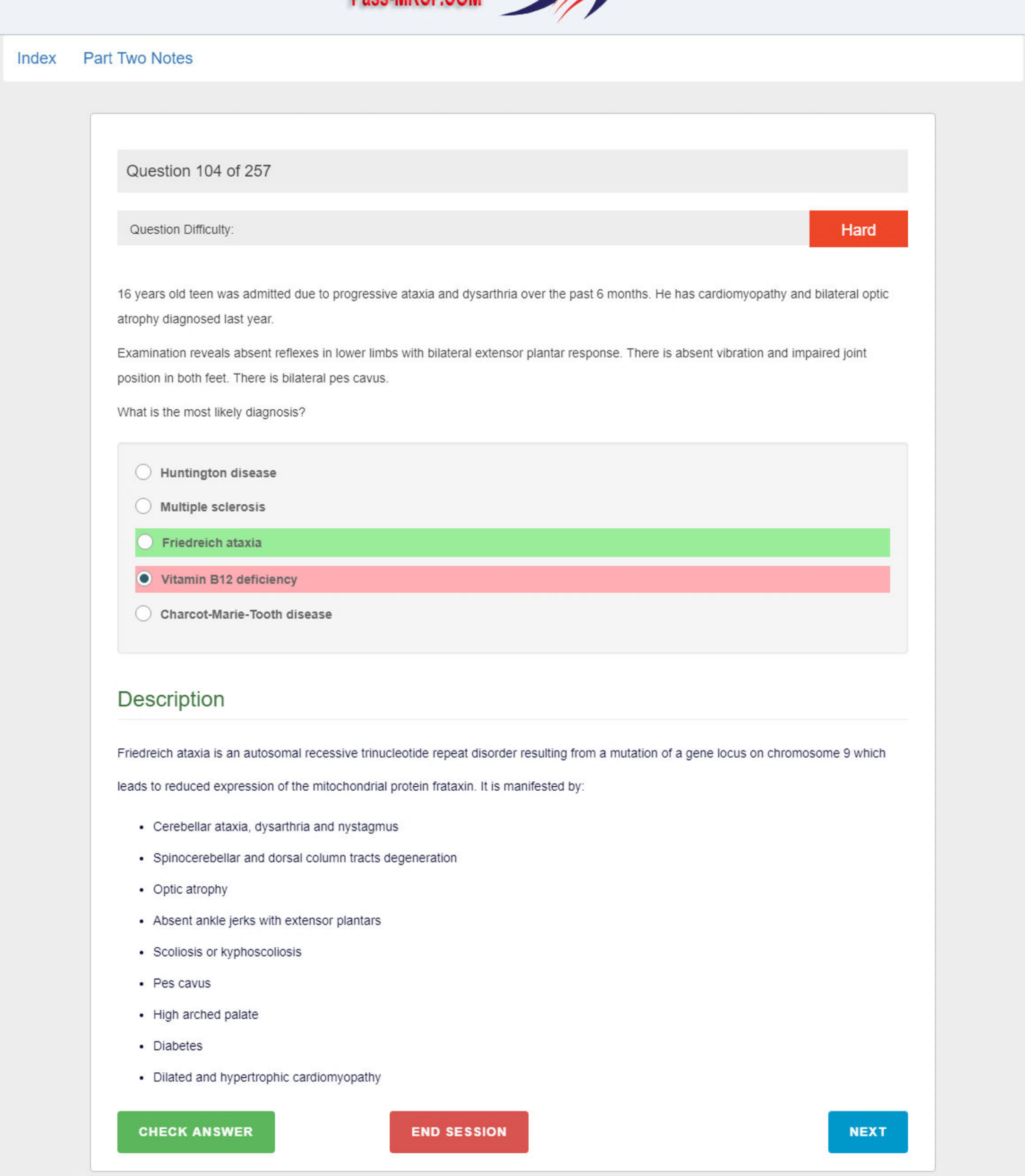
Session Statistics

Answered: 102

✓ **Correct**: 27

× **Incorrect**: 75

Average Score: 26.47 %



Question 104 of 257

Question Difficulty: Hard

16 years old teen was admitted due to progressive ataxia and dysarthria over the past 6 months. He has cardiomyopathy and bilateral optic atrophy diagnosed last year.

Examination reveals absent reflexes in lower limbs with bilateral extensor plantar response. There is absent vibration and impaired joint position in both feet. There is bilateral pes cavus.

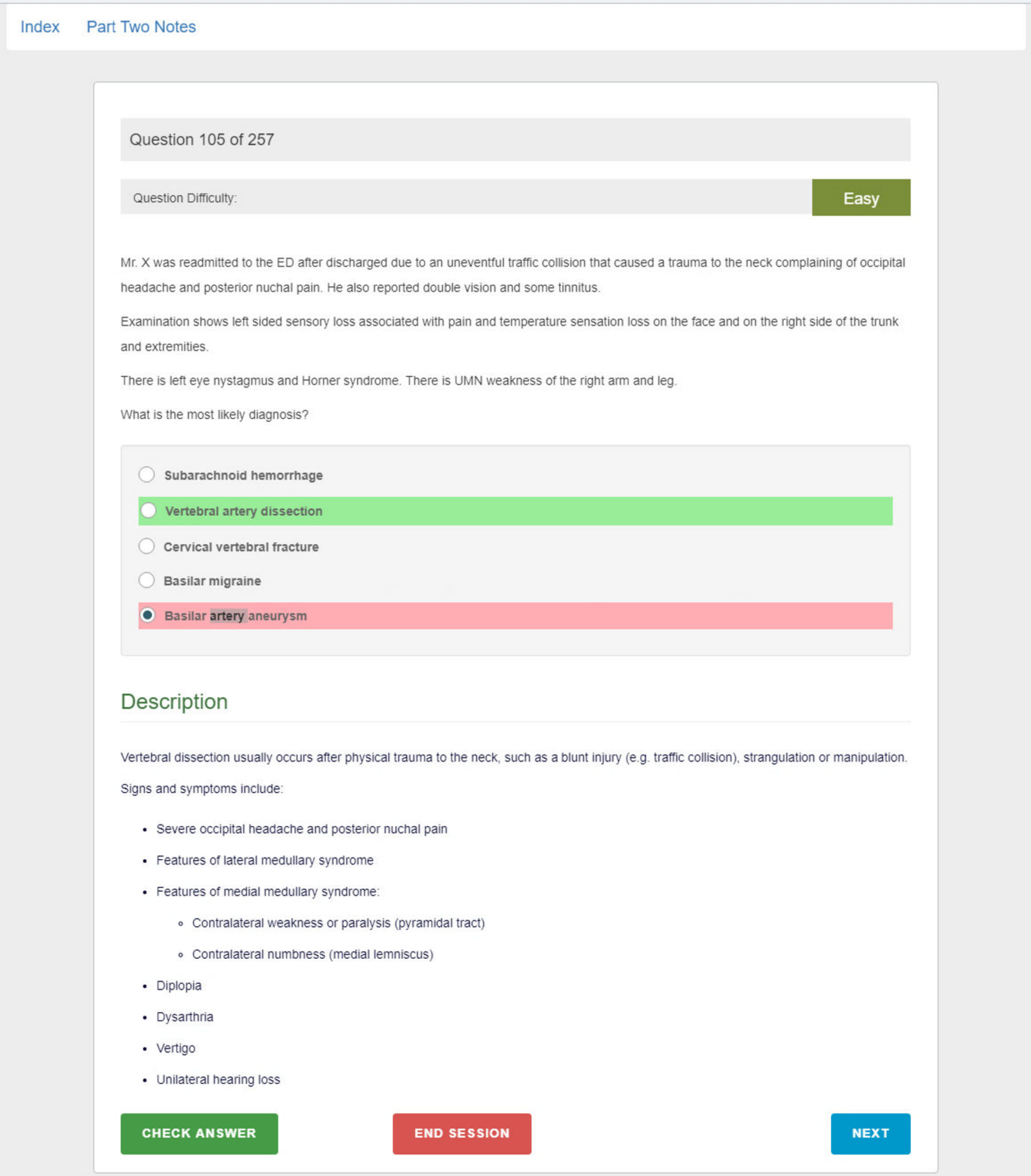
What is the most likely diagnosis?

○ **Huntington disease**
○ **Multiple sclerosis**
○ **Friedreich ataxia**
● **Vitamin B12 deficiency**
○ **Charcot-Marie-Tooth disease**

Description

Friedreich ataxia is an autosomal recessive trinucleotide repeat disorder resulting from a mutation of a gene locus on chromosome 9 which leads to reduced expression of the mitochondrial protein frataxin. It is manifested by:

- Cerebellar ataxia, dysarthria and nystagmus
- Spinocerebellar and dorsal column tracts degeneration
- Optic atrophy
- Absent ankle jerks with extensor plantars
- Scoliosis or kyphoscoliosis
- Pes cavus
- High arched palate
- Diabetes
- Dilated and hypertrophic cardiomyopathy



Question 105 of 257

Question Difficulty: Easy

Mr. X was readmitted to the ED after discharged due to an uneventful traffic collision that caused a trauma to the neck complaining of occipital headache and posterior nuchal pain. He also reported double vision and some tinnitus.

Examination shows left sided sensory loss associated with pain and temperature sensation loss on the face and on the right side of the trunk and extremities.

There is left eye nystagmus and Horner syndrome. There is UMN weakness of the right arm and leg.

What is the most likely diagnosis?

○ **Subarachnoid hemorrhage**

○ **Vertebral artery dissection**

○ **Cervical vertebral fracture**

○ **Basilar migraine**

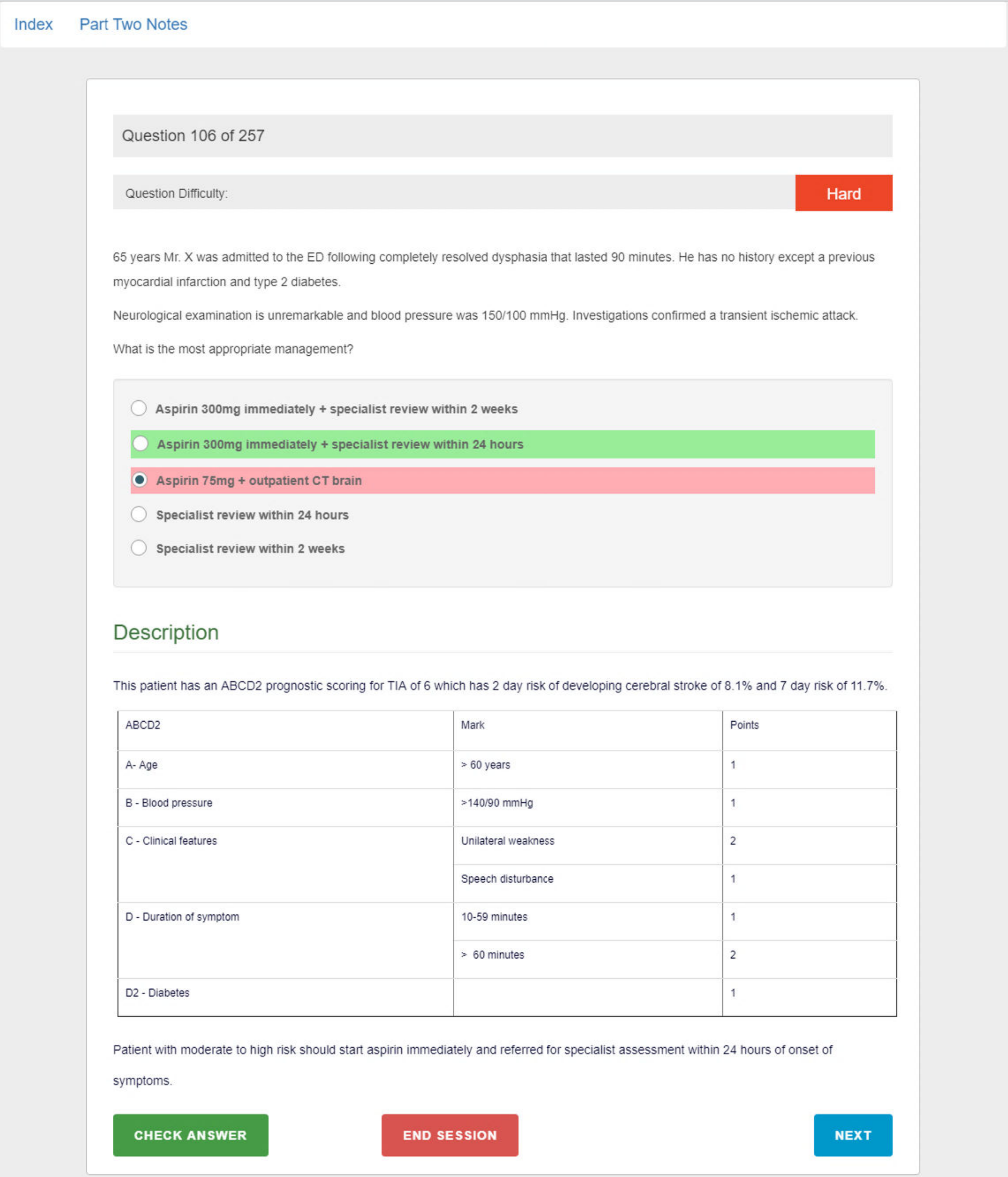
● **Basilar artery aneurysm**

Description

Vertebral dissection usually occurs after physical trauma to the neck, such as a blunt injury (e.g. traffic collision), strangulation or manipulation.

Signs and symptoms include:

- Severe occipital headache and posterior nuchal pain
- Features of lateral medullary syndrome
- Features of medial medullary syndrome:
    - Contralateral weakness or paralysis (pyramidal tract)
    - Contralateral numbness (medial lemniscus)
- Diplopia
- Dysarthria
- Vertigo
- Unilateral hearing loss



Question 106 of 257

65 years Mr. X was admitted to the ED following completely resolved dysphasia that lasted 90 minutes. He has no history except a previous myocardial infarction and type 2 diabetes.

Neurological examination is unremarkable and blood pressure was 150/100 mmHg. Investigations confirmed a transient ischemic attack.

What is the most appropriate management?

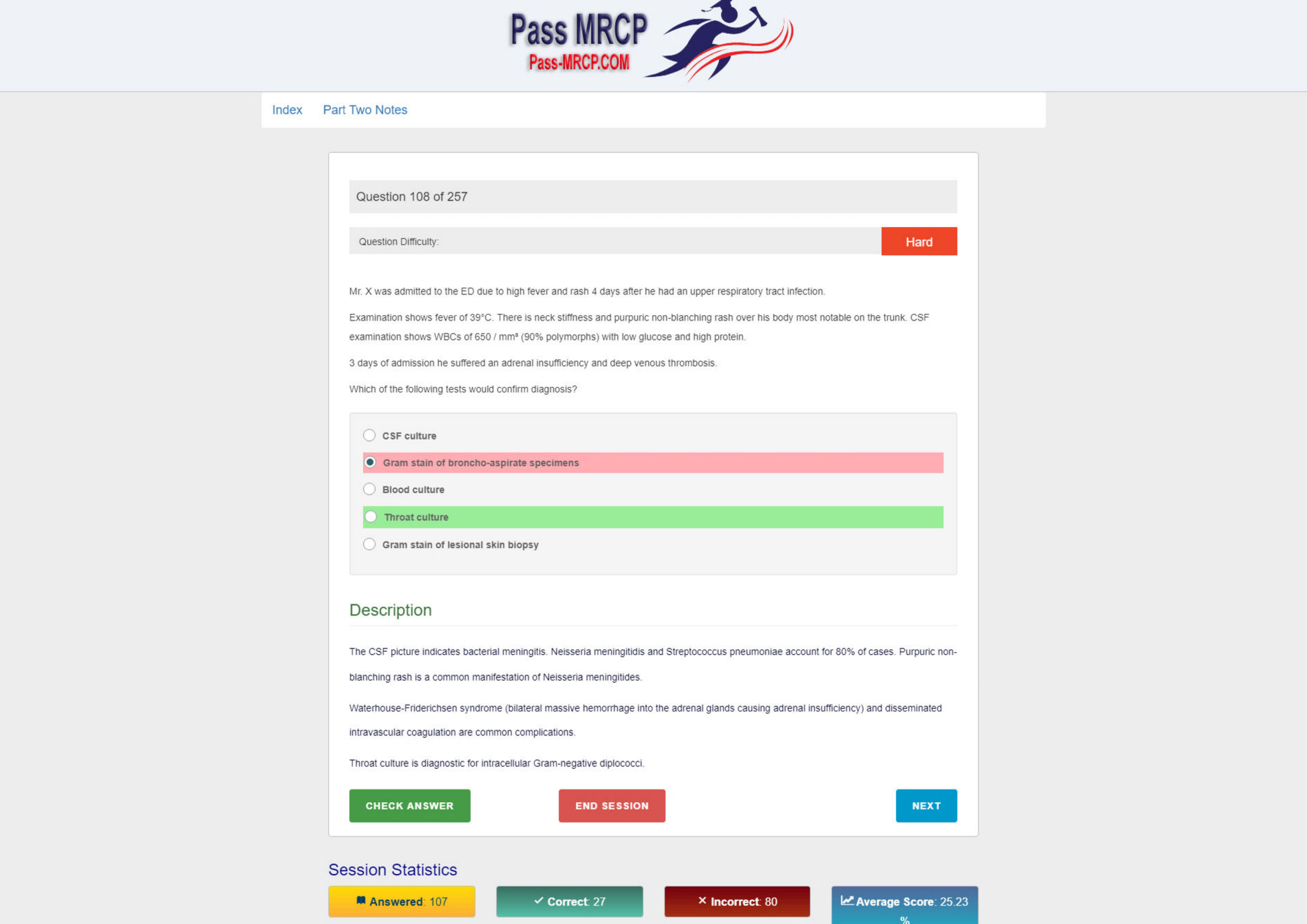
- ○ **Aspirin 300mg immediately + specialist review within 2 weeks**
- ○ **Aspirin 300mg immediately + specialist review within 24 hours**
- ● **Aspirin 75mg + outpatient CT brain**
- ○ **Specialist review within 24 hours**
- ○ **Specialist review within 2 weeks**

Description

This patient has an ABCD2 prognostic scoring for TIA of 6 which has 2 day risk of developing cerebral stroke of 8.1% and 7 day risk of 11.7%.

ABCD2	Mark	Points
A- Age	> 60 years	1
B - Blood pressure	>140/90 mmHg	1
C - Clinical features	Unilateral weakness	2
	Speech disturbance	1
D - Duration of symptom	10-59 minutes	1
	> 60 minutes	2
D2 - Diabetes		1

Patient with moderate to high risk should start aspirin immediately and referred for specialist assessment within 24 hours of onset of symptoms.



Question 108 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to high fever and rash 4 days after he had an upper respiratory tract infection.

Examination shows fever of 39°C. There is neck stiffness and purpuric non-blanching rash over his body most notable on the trunk. CSF examination shows WBCs of 650 / mm^3 (90% polymorphs) with low glucose and high protein.

3 days of admission he suffered an adrenal insufficiency and deep venous thrombosis.

Which of the following tests would confirm diagnosis?

- ○ CSF culture
- ● Gram stain of broncho-aspirate specimens
- ○ Blood culture
- ○ Throat culture
- ○ Gram stain of lesional skin biopsy

Description

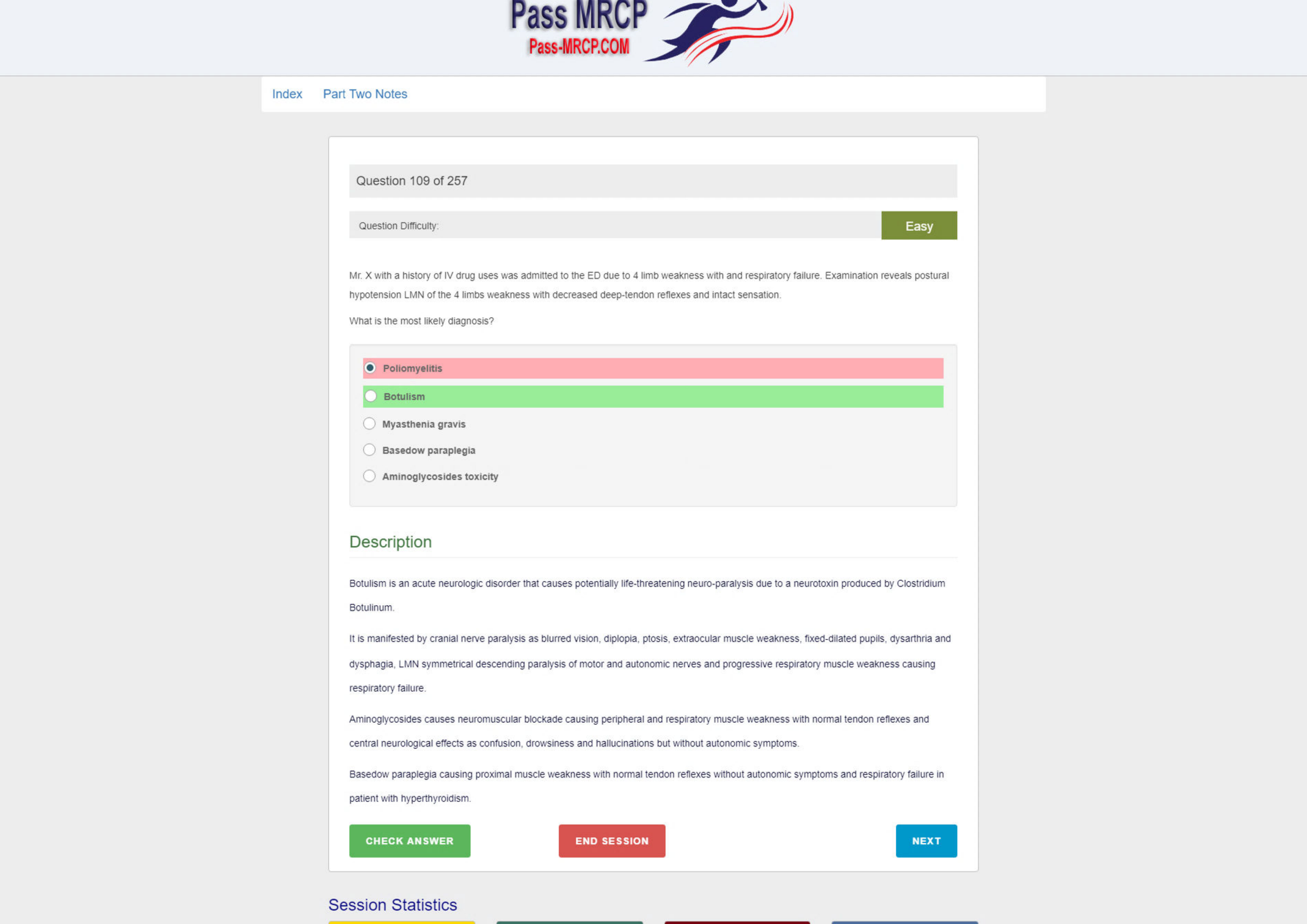
The CSF picture indicates bacterial meningitis. Neisseria meningitidis and Streptococcus pneumoniae account for 80% of cases. Purpuric non-blanching rash is a common manifestation of Neisseria meningitides.

Waterhouse-Friderichsen syndrome (bilateral massive hemorrhage into the adrenal glands causing adrenal insufficiency) and disseminated intravascular coagulation are common complications.

Throat culture is diagnostic for intracellular Gram-negative diplococci.

Session Statistics

Answered: 107
✓ Correct: 27
× Incorrect: 80
Average Score: 25.23 %



Question 109 of 257

Question Difficulty: Easy

Mr. X with a history of IV drug uses was admitted to the ED due to 4 limb weakness with and respiratory failure. Examination reveals postural hypotension LMN of the 4 limbs weakness with decreased deep-tendon reflexes and intact sensation.

What is the most likely diagnosis?

- ● **Poliomyelitis**
- ○ **Botulism**
- ○ **Myasthenia gravis**
- ○ **Basedow paraplegia**
- ○ **Aminoglycosides toxicity**

Description

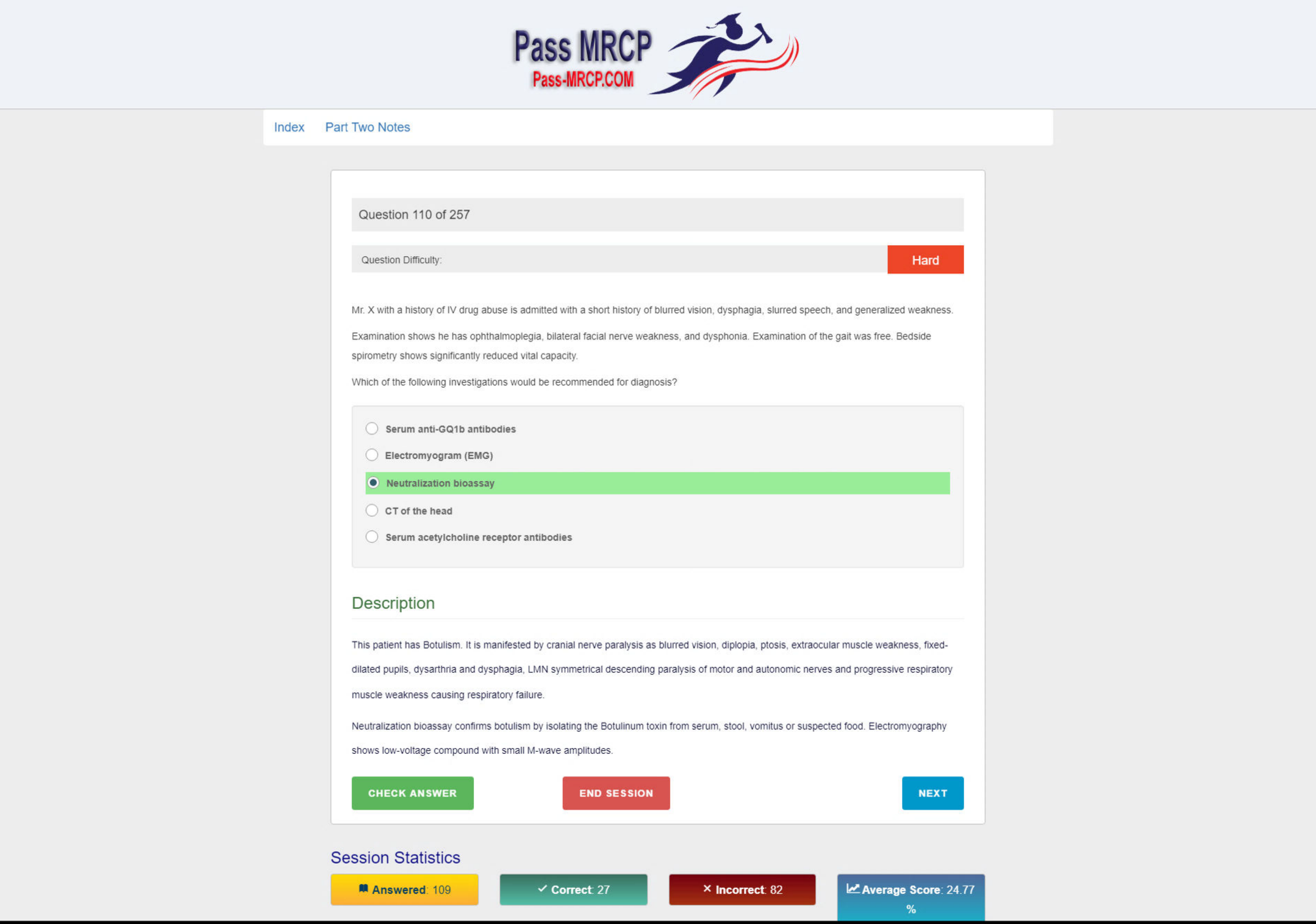
Botulism is an acute neurologic disorder that causes potentially life-threatening neuro-paralysis due to a neurotoxin produced by Clostridium Botulinum.

It is manifested by cranial nerve paralysis as blurred vision, diplopia, ptosis, extraocular muscle weakness, fixed-dilated pupils, dysarthria and dysphagia, LMN symmetrical descending paralysis of motor and autonomic nerves and progressive respiratory muscle weakness causing respiratory failure.

Aminoglycosides causes neuromuscular blockade causing peripheral and respiratory muscle weakness with normal tendon reflexes and central neurological effects as confusion, drowsiness and hallucinations but without autonomic symptoms.

Basedow paraplegia causing proximal muscle weakness with normal tendon reflexes without autonomic symptoms and respiratory failure in patient with hyperthyroidism.

Session Statistics



Question 110 of 257

Question Difficulty: Hard

Mr. X with a history of IV drug abuse is admitted with a short history of blurred vision, dysphagia, slurred speech, and generalized weakness.

Examination shows he has ophthalmoplegia, bilateral facial nerve weakness, and dysphonia. Examination of the gait was free. Bedside spirometry shows significantly reduced vital capacity.

Which of the following investigations would be recommended for diagnosis?

○ Serum anti-GQ1b antibodies
○ Electromyogram (EMG)
● Neutralization bioassay
○ CT of the head
○ Serum acetylcholine receptor antibodies

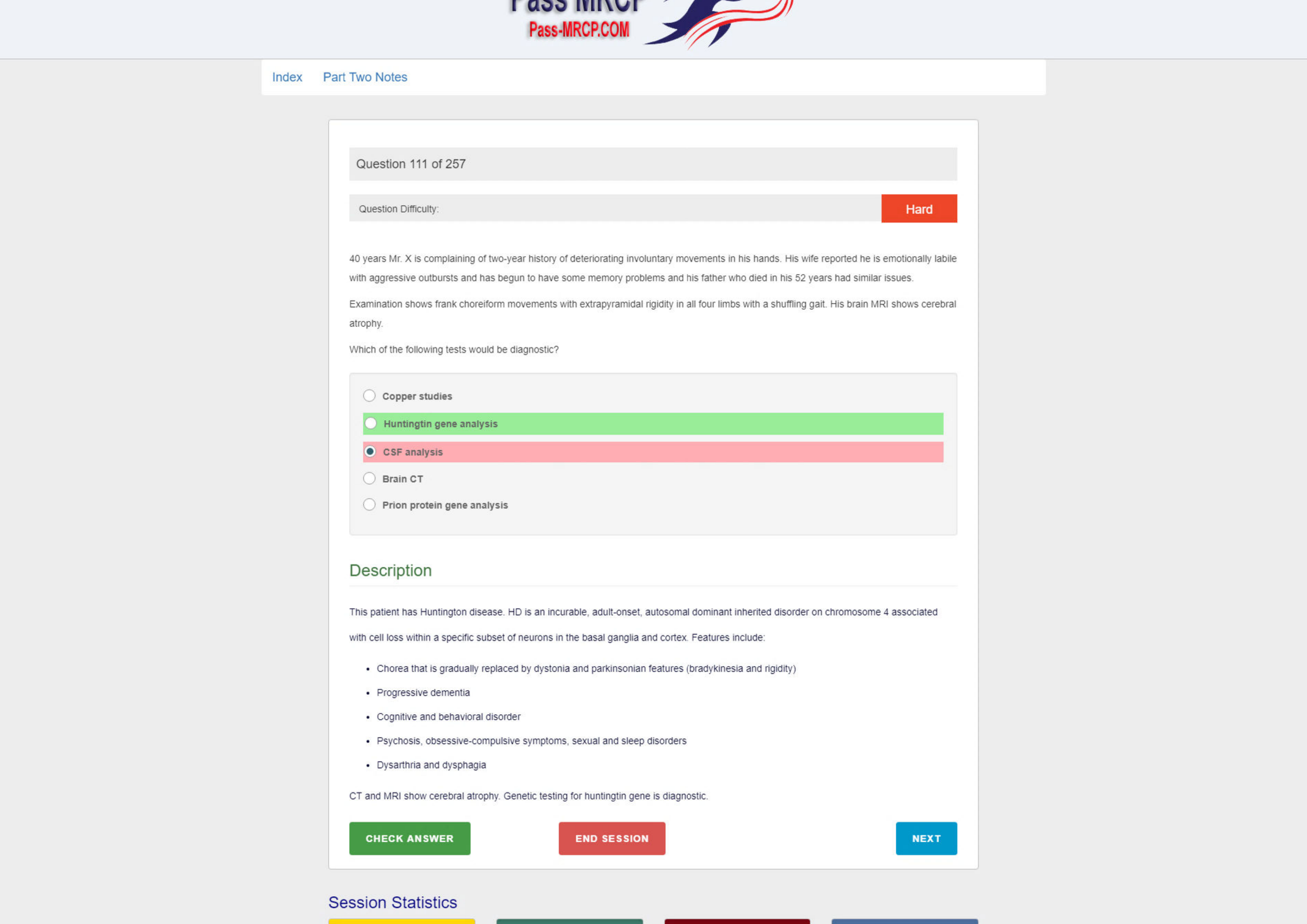
Description

This patient has Botulism. It is manifested by cranial nerve paralysis as blurred vision, diplopia, ptosis, extraocular muscle weakness, fixed-dilated pupils, dysarthria and dysphagia, LMN symmetrical descending paralysis of motor and autonomic nerves and progressive respiratory muscle weakness causing respiratory failure.

Neutralization bioassay confirms botulism by isolating the Botulinum toxin from serum, stool, vomitus or suspected food. Electromyography shows low-voltage compound with small M-wave amplitudes.

Session Statistics

Answered: 109
✓ Correct: 27
✕ Incorrect: 82
Average Score: 24.77 %



Question 111 of 257

Question Difficulty: **Hard**

40 years Mr. X is complaining of two-year history of deteriorating involuntary movements in his hands. His wife reported he is emotionally labile with aggressive outbursts and has begun to have some memory problems and his father who died in his 52 years had similar issues.

Examination shows frank choreiform movements with extrapyramidal rigidity in all four limbs with a shuffling gait. His brain MRI shows cerebral atrophy.

Which of the following tests would be diagnostic?

○ **Copper studies**
○ **Huntingtin gene analysis**
● **CSF analysis**
○ **Brain CT**
○ **Prion protein gene analysis**

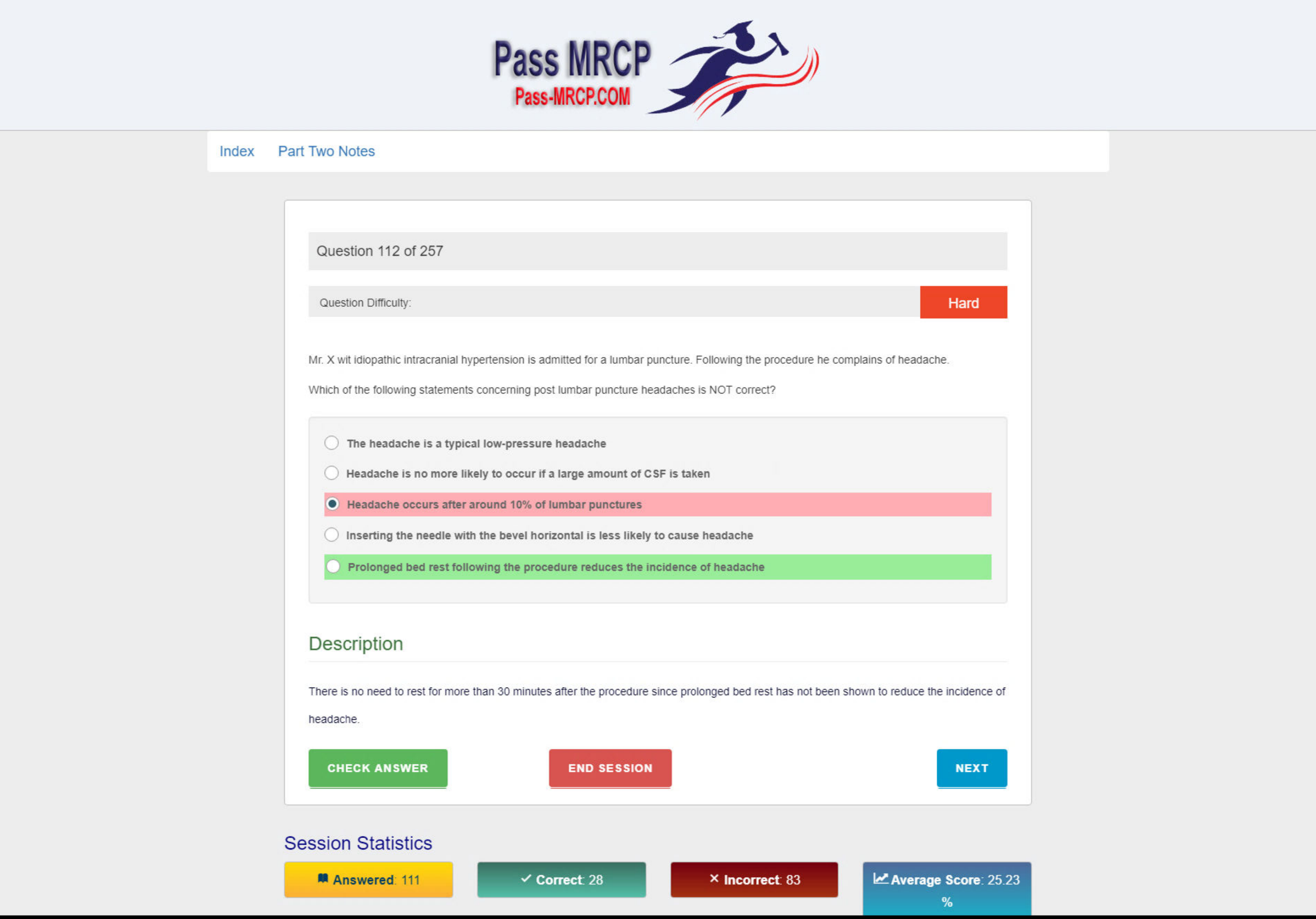
Description

This patient has Huntington disease. HD is an incurable, adult-onset, autosomal dominant inherited disorder on chromosome 4 associated with cell loss within a specific subset of neurons in the basal ganglia and cortex. Features include:

- Chorea that is gradually replaced by dystonia and parkinsonian features (bradykinesia and rigidity)
- Progressive dementia
- Cognitive and behavioral disorder
- Psychosis, obsessive-compulsive symptoms, sexual and sleep disorders
- Dysarthria and dysphagia

CT and MRI show cerebral atrophy. Genetic testing for huntingtin gene is diagnostic.

Session Statistics



Question 112 of 257

Question Difficulty: Hard

Mr. X wit idiopathic intracranial hypertension is admitted for a lumbar puncture. Following the procedure he complains of headache.

Which of the following statements concerning post lumbar puncture headaches is NOT correct?

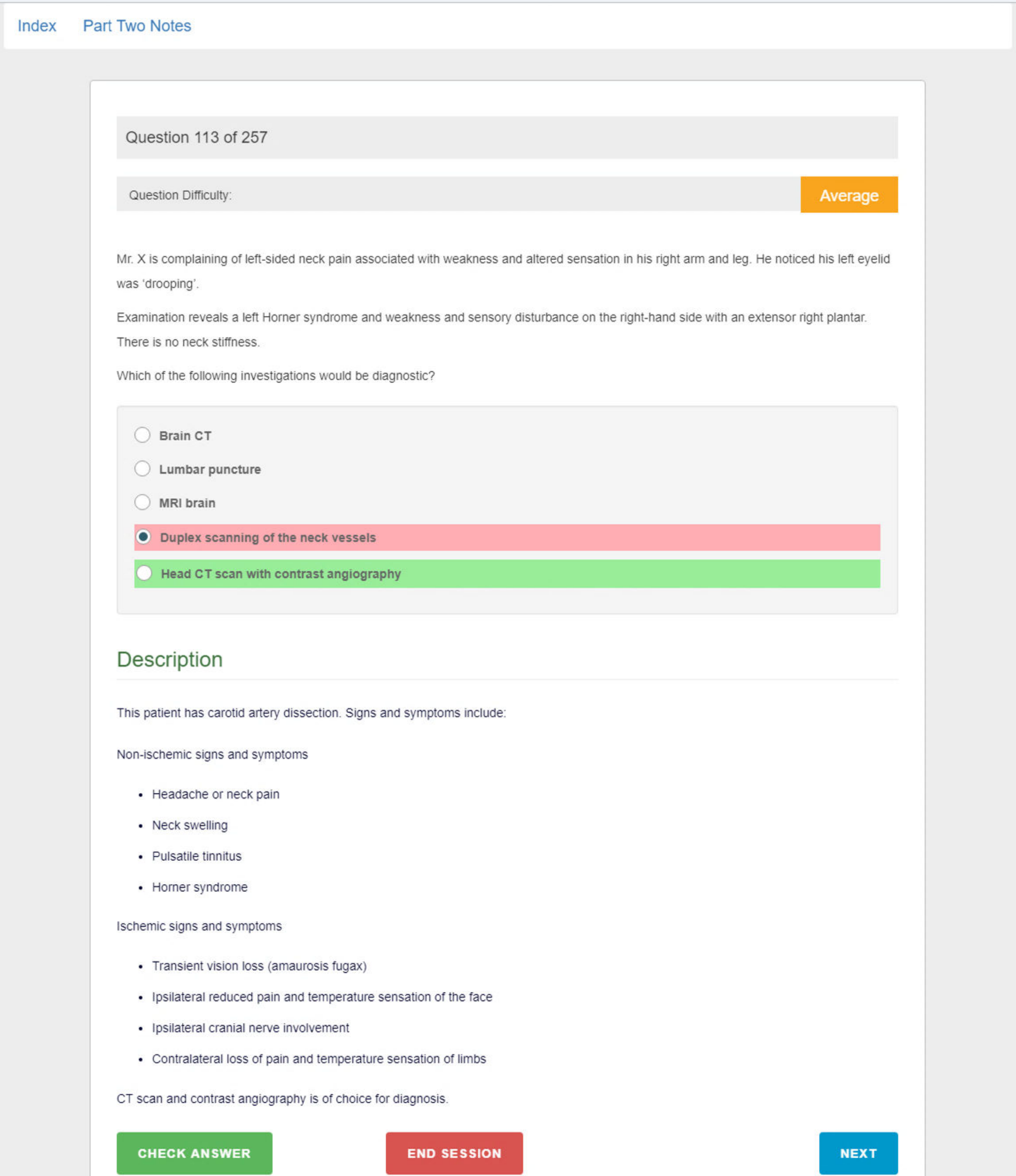
- ○ **The headache is a typical low-pressure headache**
- ○ **Headache is no more likely to occur if a large amount of CSF is taken**
- ● **Headache occurs after around 10% of lumbar punctures**
- ○ **Inserting the needle with the bevel horizontal is less likely to cause headache**
- ○ **Prolonged bed rest following the procedure reduces the incidence of headache**

Description

There is no need to rest for more than 30 minutes after the procedure since prolonged bed rest has not been shown to reduce the incidence of headache.

Session Statistics

Answered: 111
Correct: 28
Incorrect: 83
Average Score: 25.23 %



Question 113 of 257

Question Difficulty: Average

Mr. X is complaining of left-sided neck pain associated with weakness and altered sensation in his right arm and leg. He noticed his left eyelid was 'drooping'.

Examination reveals a left Horner syndrome and weakness and sensory disturbance on the right-hand side with an extensor right plantar. There is no neck stiffness.

Which of the following investigations would be diagnostic?

○ **Brain CT**
○ **Lumbar puncture**
○ **MRI brain**
● **Duplex scanning of the neck vessels**
○ **Head CT scan with contrast angiography**

Description

This patient has carotid artery dissection. Signs and symptoms include:

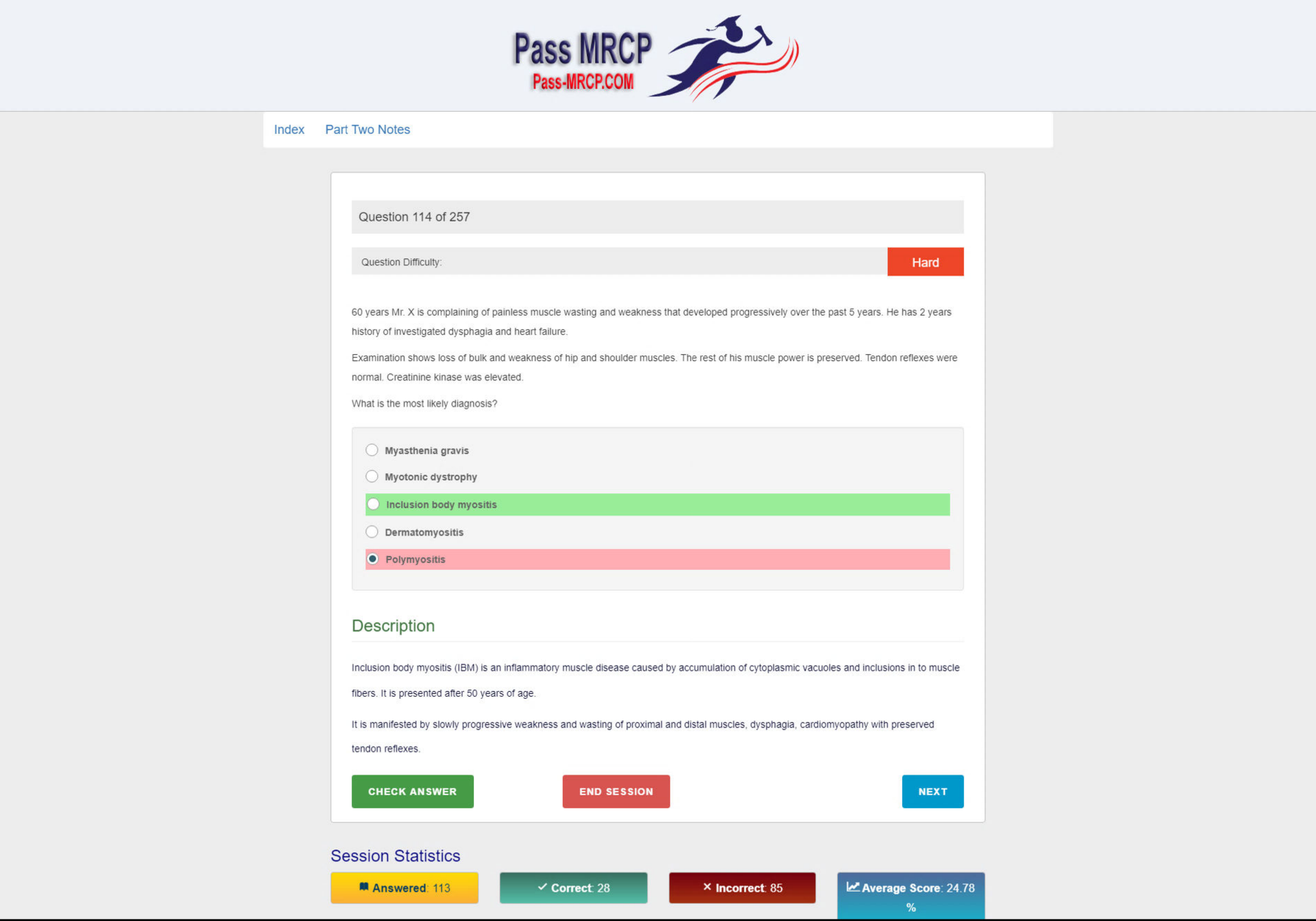
Non-ischemic signs and symptoms

- Headache or neck pain
- Neck swelling
- Pulsatile tinnitus
- Horner syndrome

Ischemic signs and symptoms

- Transient vision loss (amaurosis fugax)
- Ipsilateral reduced pain and temperature sensation of the face
- Ipsilateral cranial nerve involvement
- Contralateral loss of pain and temperature sensation of limbs

CT scan and contrast angiography is of choice for diagnosis.



Question 114 of 257

Question Difficulty: **Hard**

60 years Mr. X is complaining of painless muscle wasting and weakness that developed progressively over the past 5 years. He has 2 years history of investigated dysphagia and heart failure.

Examination shows loss of bulk and weakness of hip and shoulder muscles. The rest of his muscle power is preserved. Tendon reflexes were normal. Creatinine kinase was elevated.

What is the most likely diagnosis?

○ **Myasthenia gravis**
○ **Myotonic dystrophy**
○ **Inclusion body myositis**
○ **Dermatomyositis**
● **Polymyositis**

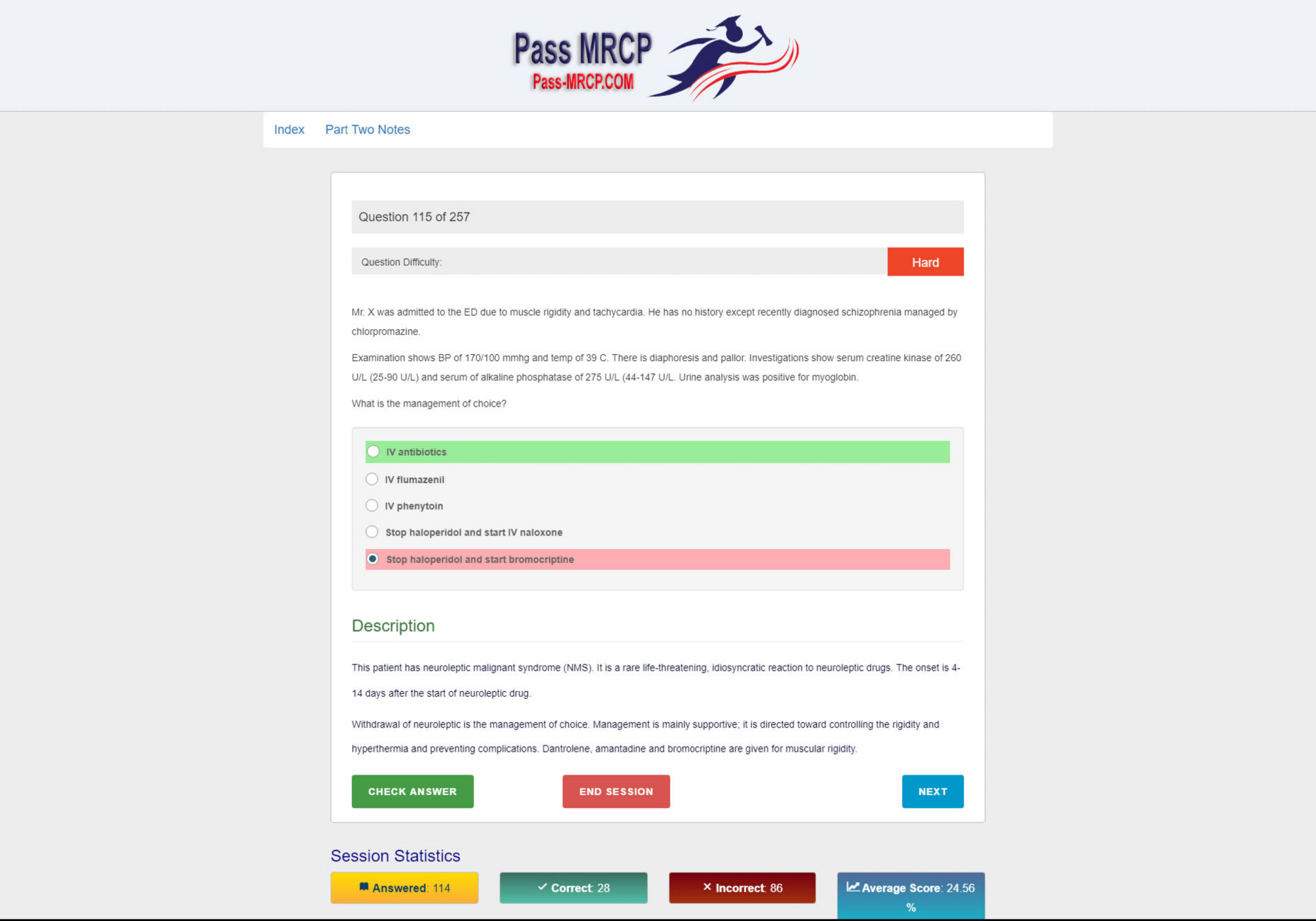
Description

Inclusion body myositis (IBM) is an inflammatory muscle disease caused by accumulation of cytoplasmic vacuoles and inclusions in to muscle fibers. It is presented after 50 years of age.

It is manifested by slowly progressive weakness and wasting of proximal and distal muscles, dysphagia, cardiomyopathy with preserved tendon reflexes.

Session Statistics

Answered: 113
✓ **Correct**: 28
✕ **Incorrect**: 85
Average Score: 24.78 %



Question 115 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to muscle rigidity and tachycardia. He has no history except recently diagnosed schizophrenia managed by chlorpromazine.

Examination shows BP of 170/100 mmhg and temp of 39 C. There is diaphoresis and pallor. Investigations show serum creatine kinase of 260 U/L (25-90 U/L) and serum of alkaline phosphatase of 275 U/L (44-147 U/L. Urine analysis was positive for myoglobin.

What is the management of choice?

- ○ **IV antibiotics**
- ○ **IV flumazenil**
- ○ **IV phenytoin**
- ○ **Stop haloperidol and start IV naloxone**
- ● **Stop haloperidol and start bromocriptine**

Description

This patient has neuroleptic malignant syndrome (NMS). It is a rare life-threatening, idiosyncratic reaction to neuroleptic drugs. The onset is 4-14 days after the start of neuroleptic drug.

Withdrawal of neuroleptic is the management of choice. Management is mainly supportive; it is directed toward controlling the rigidity and hyperthermia and preventing complications. Dantrolene, amantadine and bromocriptine are given for muscular rigidity.

Session Statistics

Answered: 114
✓ Correct: 28
× Incorrect: 86
Average Score: 24.56 %

Question 116 of 257

Question Difficulty: **Easy**

Mr. X was admitted to the ED due to muscle rigidity, high fever and confusion. He has no history except recently diagnosed Parkinson disease managed by levodopa.

Examination shows BP of 170/100 mmhg and temp of 39 C. There is diaphoresis and pallor. Investigations show:

Hemoglobin	12 g/dL	(13.5-17.5 g/dL)
Leukocyte count	13 X10 9 /L	(4.0-11.0 x 10 9 /L)
Bilirubin	22 µmol/L	(2-17 µmol/L)
Serum creatine kinase	285 U/L	(25-90 U/L)
Serum creatinine	105 mmol/L	(53-106 mmol/L)
Serum alkaline phosphatase	275 U/L	(44-147 U/L)

What is the most likely diagnosis?

○ **Stiff person syndrome**
○ **Peak of dose dyskinesia**
● **Neuroleptic malignant syndrome**
○ **Malignant hyperthermia**
○ **Septicemia**

Description

Neuroleptic malignant syndrome (NMS) is a rare life-threatening, idiosyncratic reaction to neuroleptic drugs. The onset is 4-14 days after the start of neuroleptic drug. It is manifested by:

- Severe muscular rigidity
- Diaphoresis
- Pallor
- Dysphagia
- Dyspnea
- Hyperthermia
- Autonomic instability
- Delirium progressing to lethargy, stupor, coma

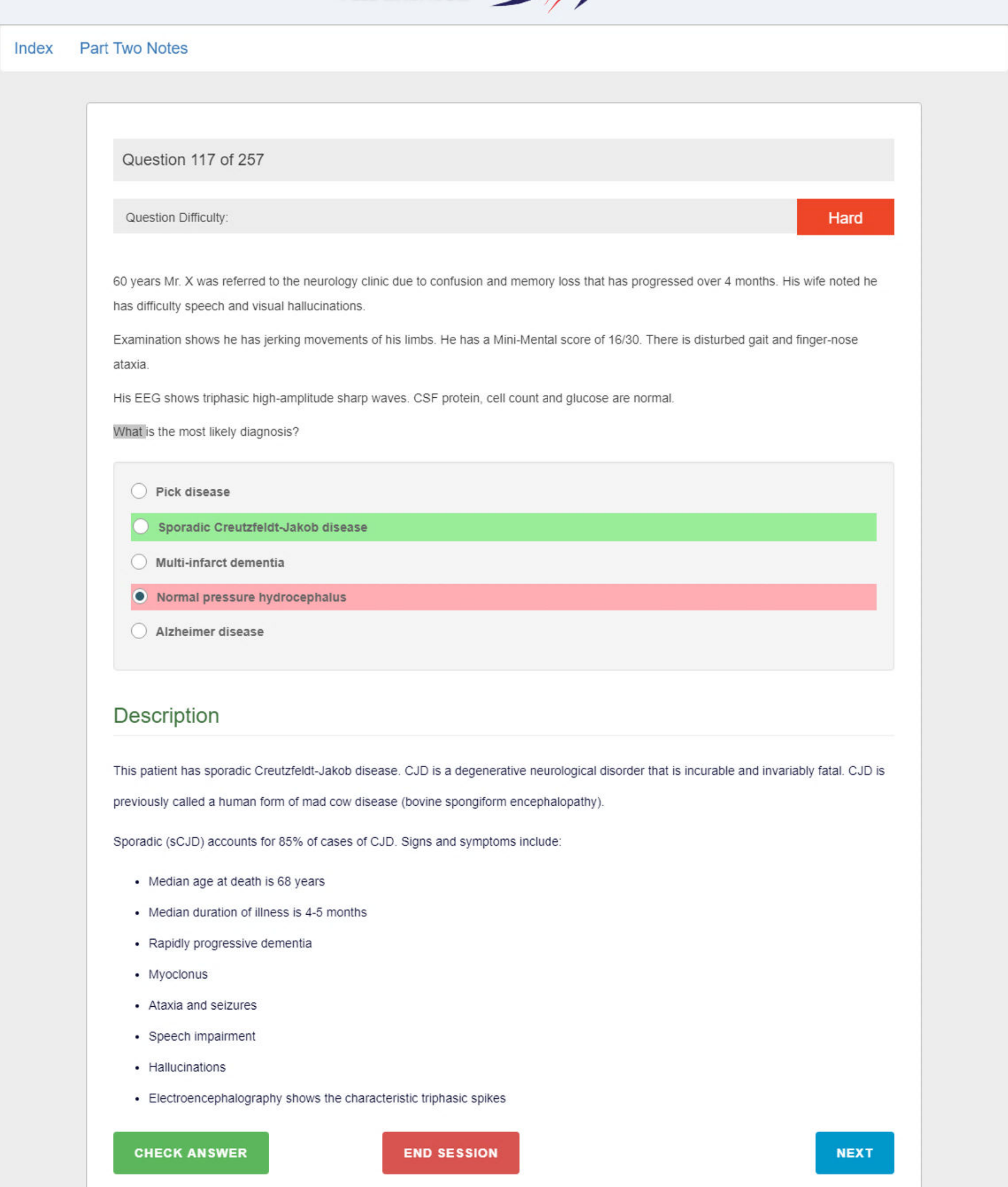
LAB findings include:

- Increased creatine kinase (50-100% of cases) and LDH
- Increased alkaline phosphatase
- Myoglobinuria
- Leukocytosis

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 115 ✓ **Correct**: 28 ✕ **Incorrect**: 87 **Average Score**: 24.35 %



Question 117 of 257

Question Difficulty: **Hard**

60 years Mr. X was referred to the neurology clinic due to confusion and memory loss that has progressed over 4 months. His wife noted he has difficulty speech and visual hallucinations.

Examination shows he has jerking movements of his limbs. He has a Mini-Mental score of 16/30. There is disturbed gait and finger-nose ataxia.

His EEG shows triphasic high-amplitude sharp waves. CSF protein, cell count and glucose are normal.

What is the most likely diagnosis?

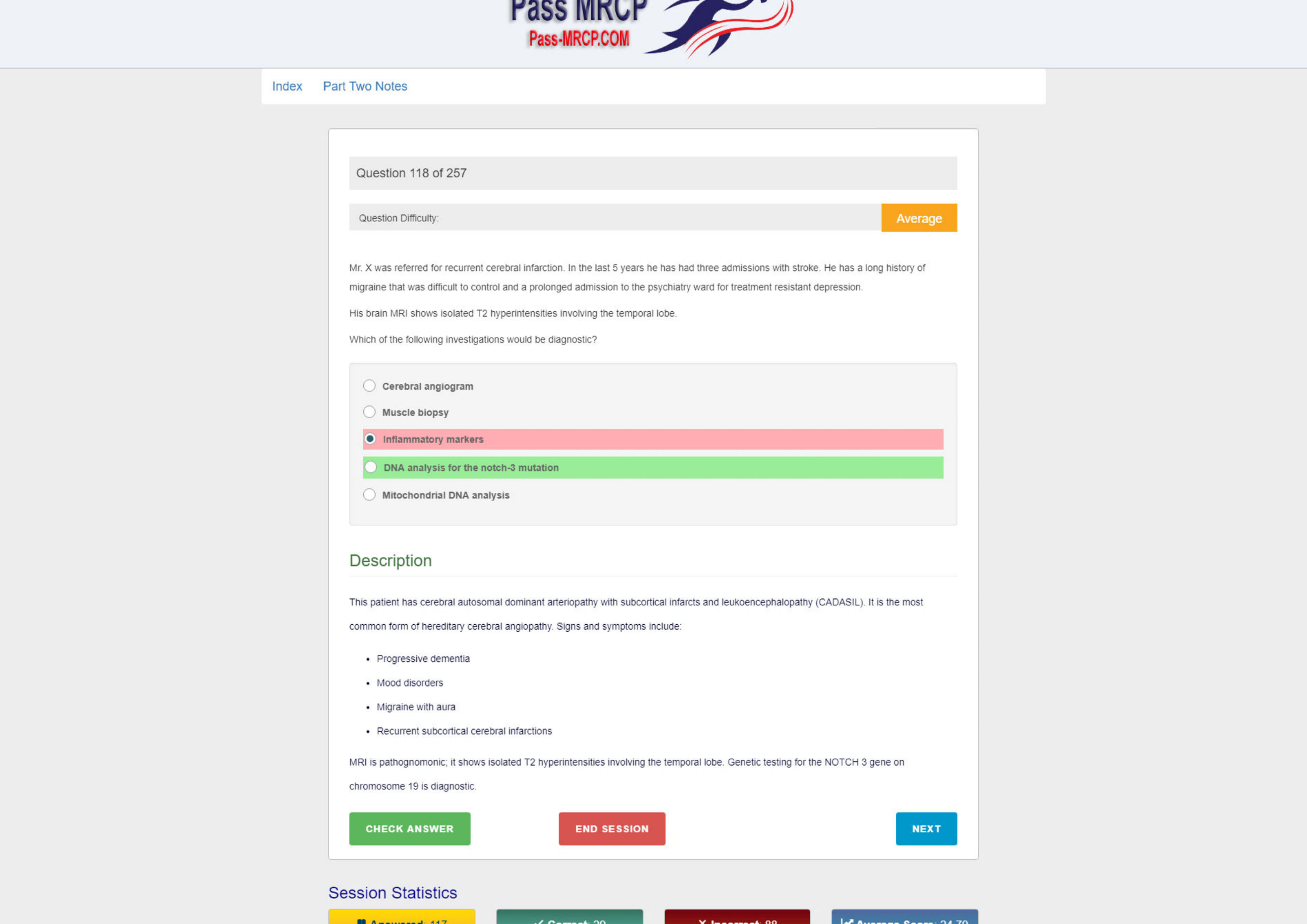
○ **Pick disease**
○ **Sporadic Creutzfeldt-Jakob disease**
○ **Multi-infarct dementia**
● **Normal pressure hydrocephalus**
○ **Alzheimer disease**

Description

This patient has sporadic Creutzfeldt-Jakob disease. CJD is a degenerative neurological disorder that is incurable and invariably fatal. CJD is previously called a human form of mad cow disease (bovine spongiform encephalopathy).

Sporadic (sCJD) accounts for 85% of cases of CJD. Signs and symptoms include:

- Median age at death is 68 years
- Median duration of illness is 4-5 months
- Rapidly progressive dementia
- Myoclonus
- Ataxia and seizures
- Speech impairment
- Hallucinations
- Electroencephalography shows the characteristic triphasic spikes



Question 118 of 257

Question Difficulty: Average

Mr. X was referred for recurrent cerebral infarction. In the last 5 years he has had three admissions with stroke. He has a long history of migraine that was difficult to control and a prolonged admission to the psychiatry ward for treatment resistant depression.

His brain MRI shows isolated T2 hyperintensities involving the temporal lobe.

Which of the following investigations would be diagnostic?

○ **Cerebral angiogram**
○ **Muscle biopsy**
● **Inflammatory markers**
○ **DNA analysis for the notch-3 mutation**
○ **Mitochondrial DNA analysis**

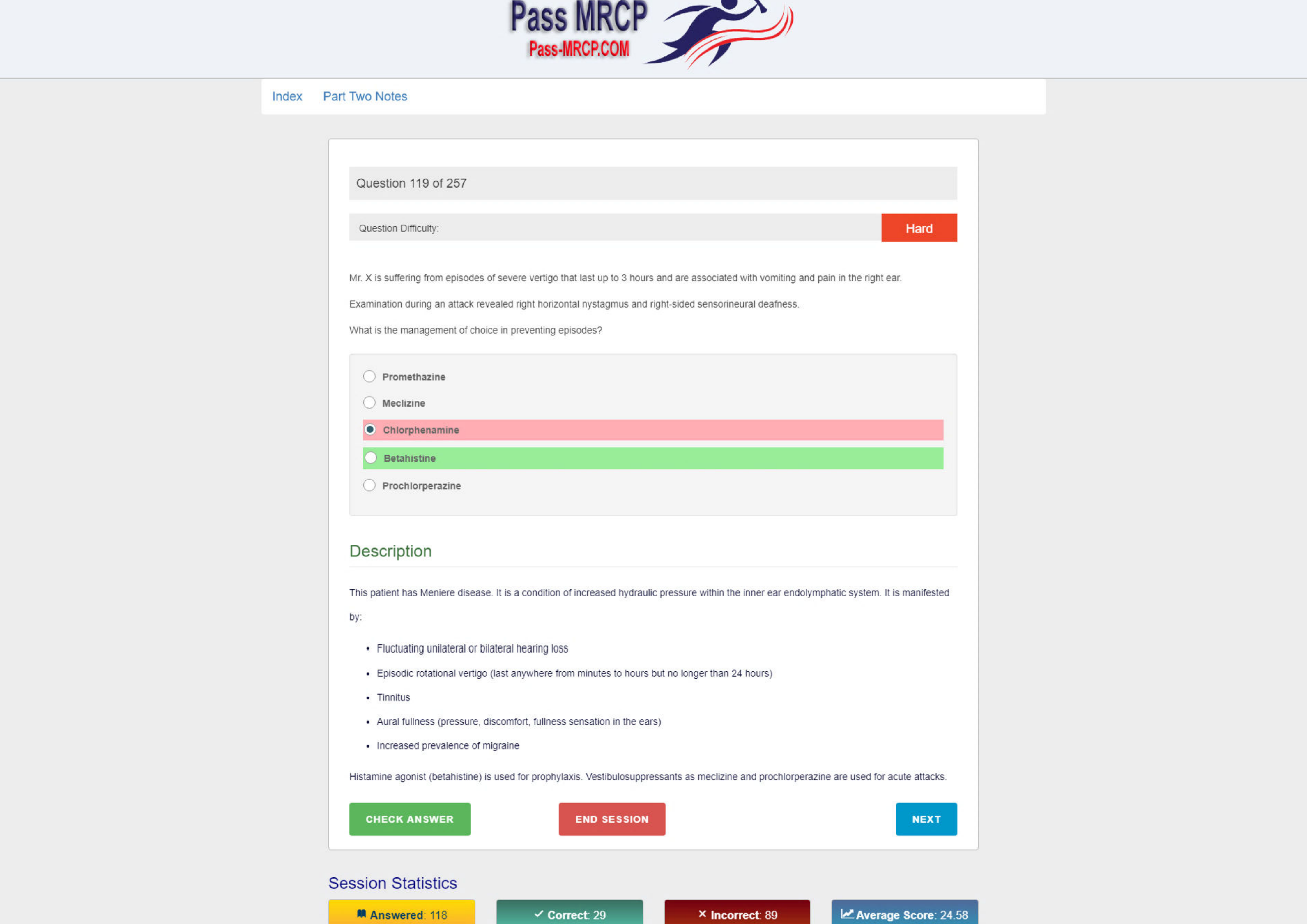
Description

This patient has cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL). It is the most common form of hereditary cerebral angiopathy. Signs and symptoms include:

- Progressive dementia
- Mood disorders
- Migraine with aura
- Recurrent subcortical cerebral infarctions

MRI is pathognomonic; it shows isolated T2 hyperintensities involving the temporal lobe. Genetic testing for the NOTCH 3 gene on chromosome 19 is diagnostic.

Session Statistics



Question 119 of 257

Question Difficulty: Hard

Mr. X is suffering from episodes of severe vertigo that last up to 3 hours and are associated with vomiting and pain in the right ear.

Examination during an attack revealed right horizontal nystagmus and right-sided sensorineural deafness.

What is the management of choice in preventing episodes?

○ **Promethazine**

○ **Meclizine**

● **Chlorphenamine**

○ **Betahistine**

○ **Prochlorperazine**

Description

This patient has Meniere disease. It is a condition of increased hydraulic pressure within the inner ear endolymphatic system. It is manifested by:

- Fluctuating unilateral or bilateral hearing loss
- Episodic rotational vertigo (last anywhere from minutes to hours but no longer than 24 hours)
- Tinnitus
- Aural fullness (pressure, discomfort, fullness sensation in the ears)
- Increased prevalence of migraine

Histamine agonist (betahistine) is used for prophylaxis. Vestibulosuppressants as meclizine and prochlorperazine are used for acute attacks.

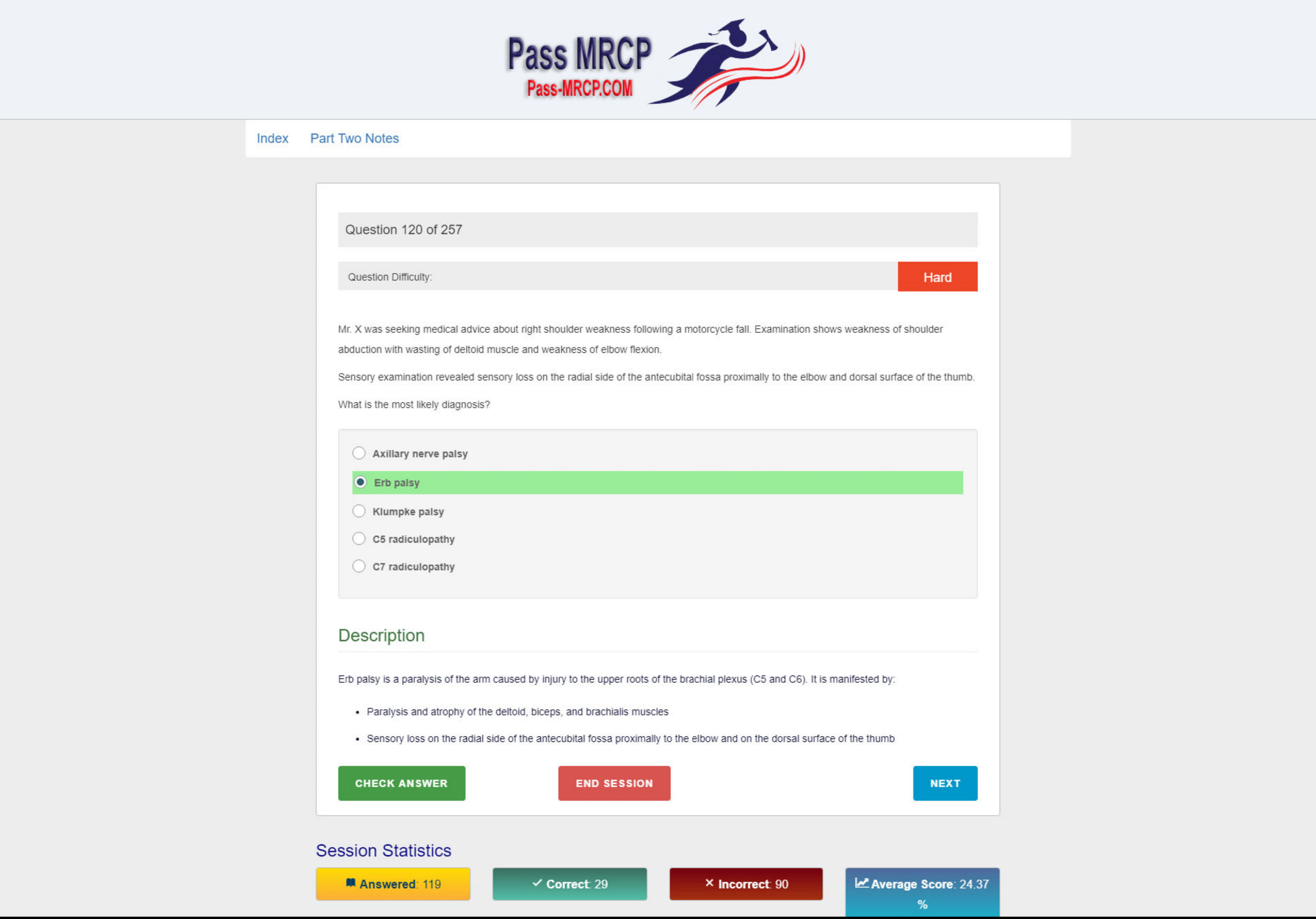
Session Statistics

Answered: 118

Correct: 29

Incorrect: 89

Average Score: 24.58



Question 120 of 257

Question Difficulty: Hard

Mr. X was seeking medical advice about right shoulder weakness following a motorcycle fall. Examination shows weakness of shoulder abduction with wasting of deltoid muscle and weakness of elbow flexion.

Sensory examination revealed sensory loss on the radial side of the antecubital fossa proximally to the elbow and dorsal surface of the thumb.

What is the most likely diagnosis?

○ **Axillary nerve palsy**
● **Erb palsy**
○ **Klumpke palsy**
○ **C5 radiculopathy**
○ **C7 radiculopathy**

Description

Erb palsy is a paralysis of the arm caused by injury to the upper roots of the brachial plexus (C5 and C6). It is manifested by:

- Paralysis and atrophy of the deltoid, biceps, and brachialis muscles
- Sensory loss on the radial side of the antecubital fossa proximally to the elbow and on the dorsal surface of the thumb

Session Statistics

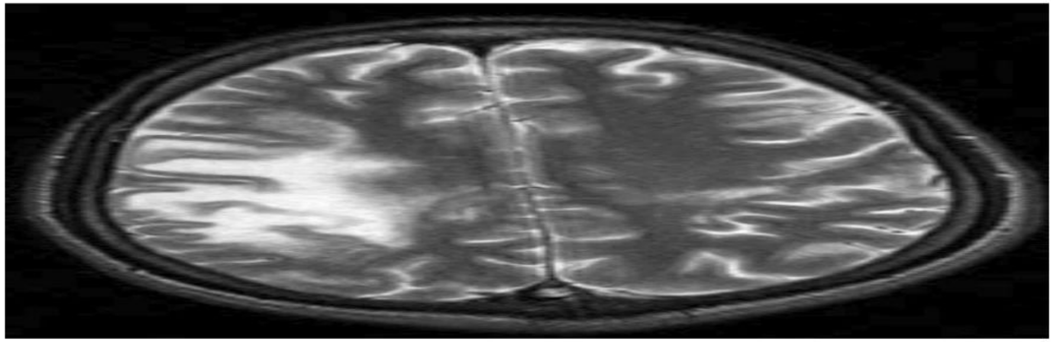
Answered: 119
✓ **Correct**: 29
✕ **Incorrect**: 90
Average Score: 24.37 %

Question 121 of 257

Question Difficulty: **Hard**

Mr. X is complaining of increasing lethargy and confusion. His daughter reported his speech had become slurred and had fallen three times in the last week. He has a medical history of AIDS for the past 4 years.

Neurological examination shows the left side seems to have increased tone compared to the right and seems slightly weaker. Brain MRI is shown in the image. Cerebrospinal fluid analysis was free and culture was negative.



What is the management of choice?

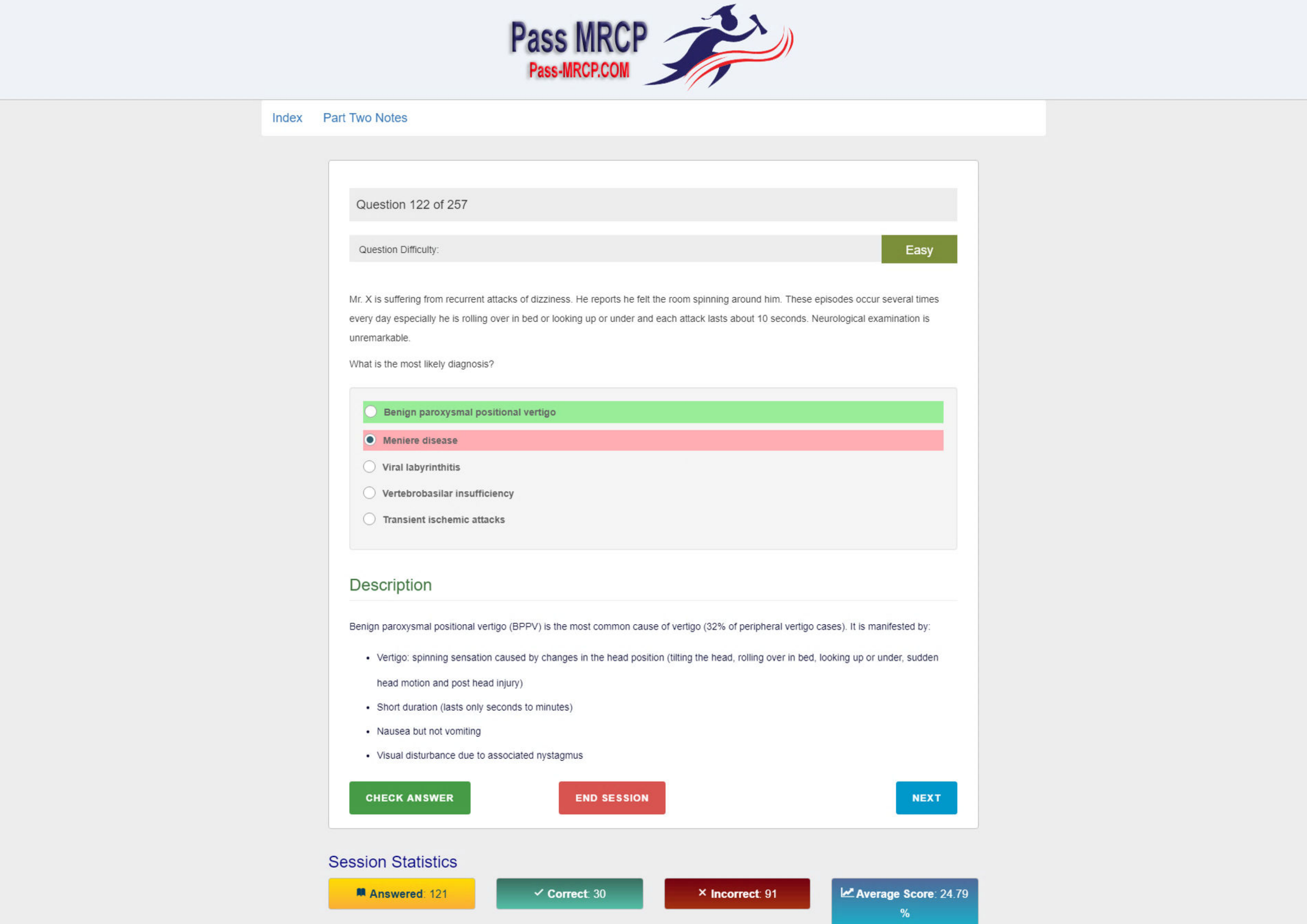
- ○ **Sulphadiazine and pyrimethamine**
- ● **High-dose fluconazole**
- ○ **IV acyclovir**
- ○ **Highly active antiretroviral therapy**
- ○ **IV ganciclovir**

Description

This patient has Progressive multifocal leukoencephalopathy. It is widespread CNS demyelination due to infection by JC virus. PML occurs almost exclusively in patients with severe immune deficiency as AIDS and chronic immunosuppressive medications.

Signs and symptoms include behavioral changes, motor weakness and speech and visual impairment. MRI shows patchy demyelination. HAART is the management of choice.

CHECK ANSWER END SESSION NEXT



Question 122 of 257

Question Difficulty: Easy

Mr. X is suffering from recurrent attacks of dizziness. He reports he felt the room spinning around him. These episodes occur several times every day especially he is rolling over in bed or looking up or under and each attack lasts about 10 seconds. Neurological examination is unremarkable.

What is the most likely diagnosis?

○ **Benign paroxysmal positional vertigo**

● **Meniere disease**

○ **Viral labyrinthitis**

○ **Vertebrobasilar insufficiency**

○ **Transient ischemic attacks**

Description

Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo (32% of peripheral vertigo cases). It is manifested by:

- Vertigo: spinning sensation caused by changes in the head position (tilting the head, rolling over in bed, looking up or under, sudden head motion and post head injury)
- Short duration (lasts only seconds to minutes)
- Nausea but not vomiting
- Visual disturbance due to associated nystagmus

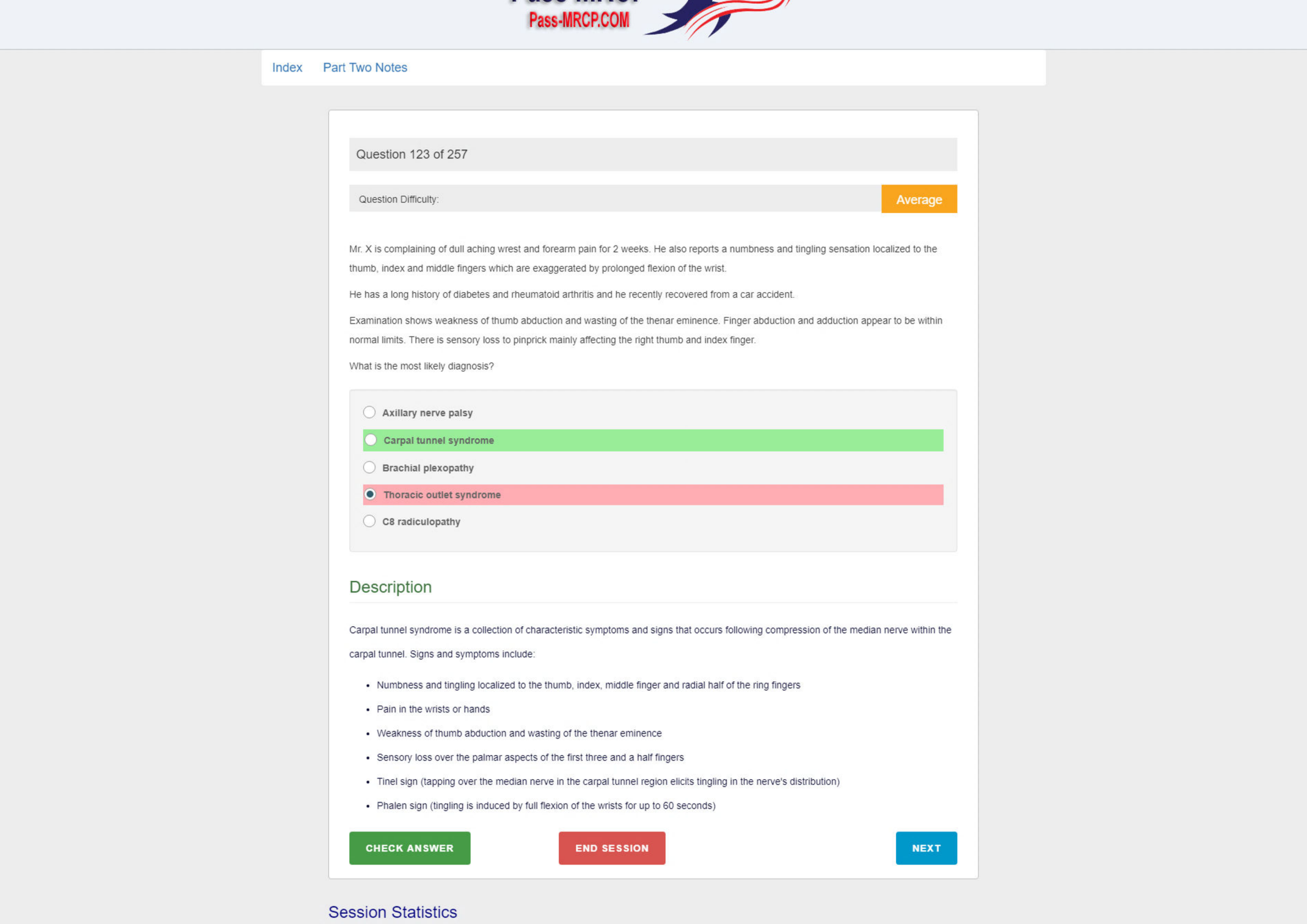
Session Statistics

Answered: 121

✓ **Correct**: 30

✕ **Incorrect**: 91

Average Score: 24.79 %



Question 123 of 257

Question Difficulty: Average

Mr. X is complaining of dull aching wrest and forearm pain for 2 weeks. He also reports a numbness and tingling sensation localized to the thumb, index and middle fingers which are exaggerated by prolonged flexion of the wrist.

He has a long history of diabetes and rheumatoid arthritis and he recently recovered from a car accident.

Examination shows weakness of thumb abduction and wasting of the thenar eminence. Finger abduction and adduction appear to be within normal limits. There is sensory loss to pinprick mainly affecting the right thumb and index finger.

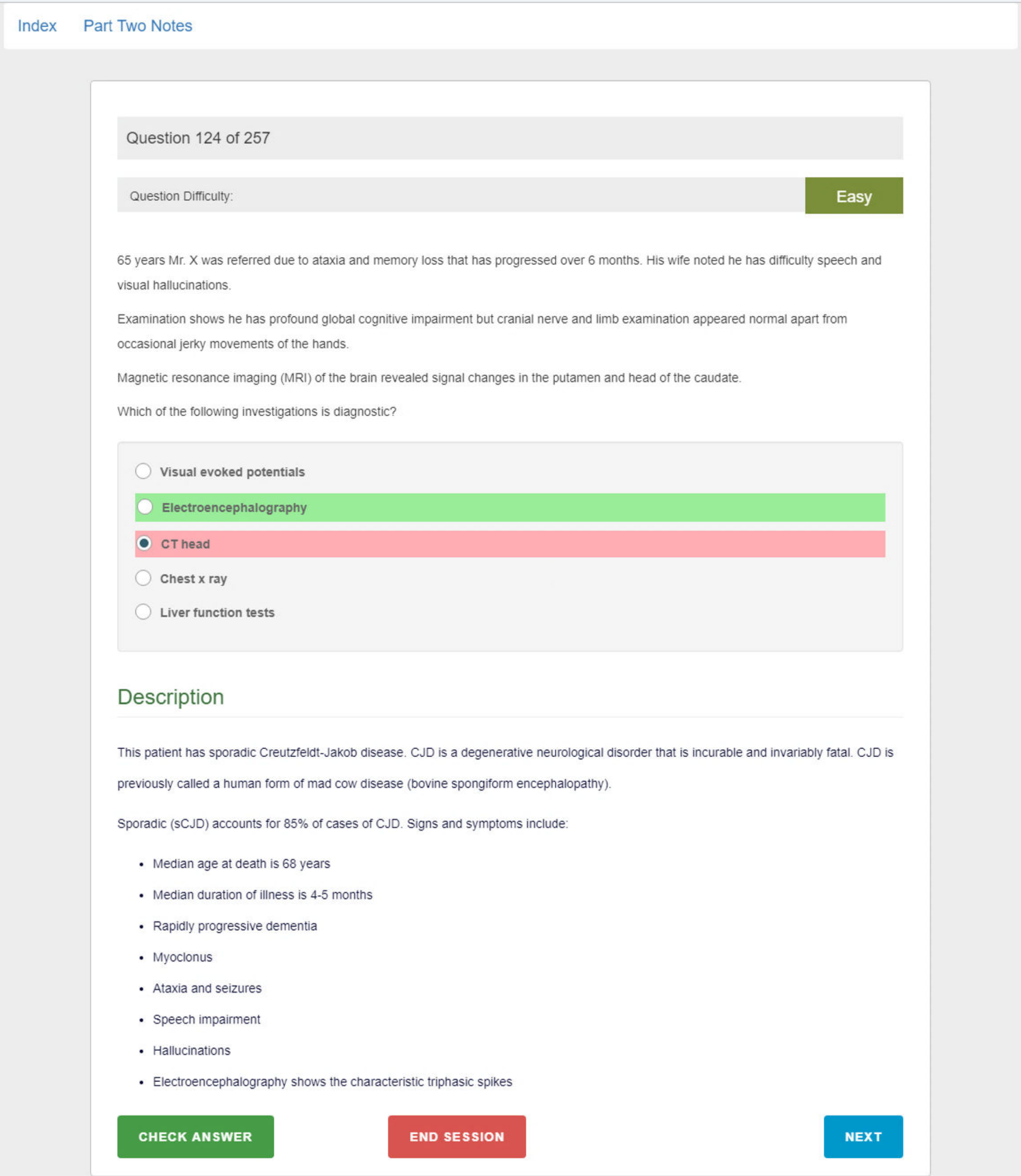
What is the most likely diagnosis?

○ **Axillary nerve palsy**
○ **Carpal tunnel syndrome**
○ **Brachial plexopathy**
● **Thoracic outlet syndrome**
○ **C8 radiculopathy**

Description

Carpal tunnel syndrome is a collection of characteristic symptoms and signs that occurs following compression of the median nerve within the carpal tunnel. Signs and symptoms include:

- Numbness and tingling localized to the thumb, index, middle finger and radial half of the ring fingers
- Pain in the wrists or hands
- Weakness of thumb abduction and wasting of the thenar eminence
- Sensory loss over the palmar aspects of the first three and a half fingers
- Tinel sign (tapping over the median nerve in the carpal tunnel region elicits tingling in the nerve's distribution)
- Phalen sign (tingling is induced by full flexion of the wrists for up to 60 seconds)



Question 124 of 257

Question Difficulty: Easy

65 years Mr. X was referred due to ataxia and memory loss that has progressed over 6 months. His wife noted he has difficulty speech and visual hallucinations.

Examination shows he has profound global cognitive impairment but cranial nerve and limb examination appeared normal apart from occasional jerky movements of the hands.

Magnetic resonance imaging (MRI) of the brain revealed signal changes in the putamen and head of the caudate.

Which of the following investigations is diagnostic?

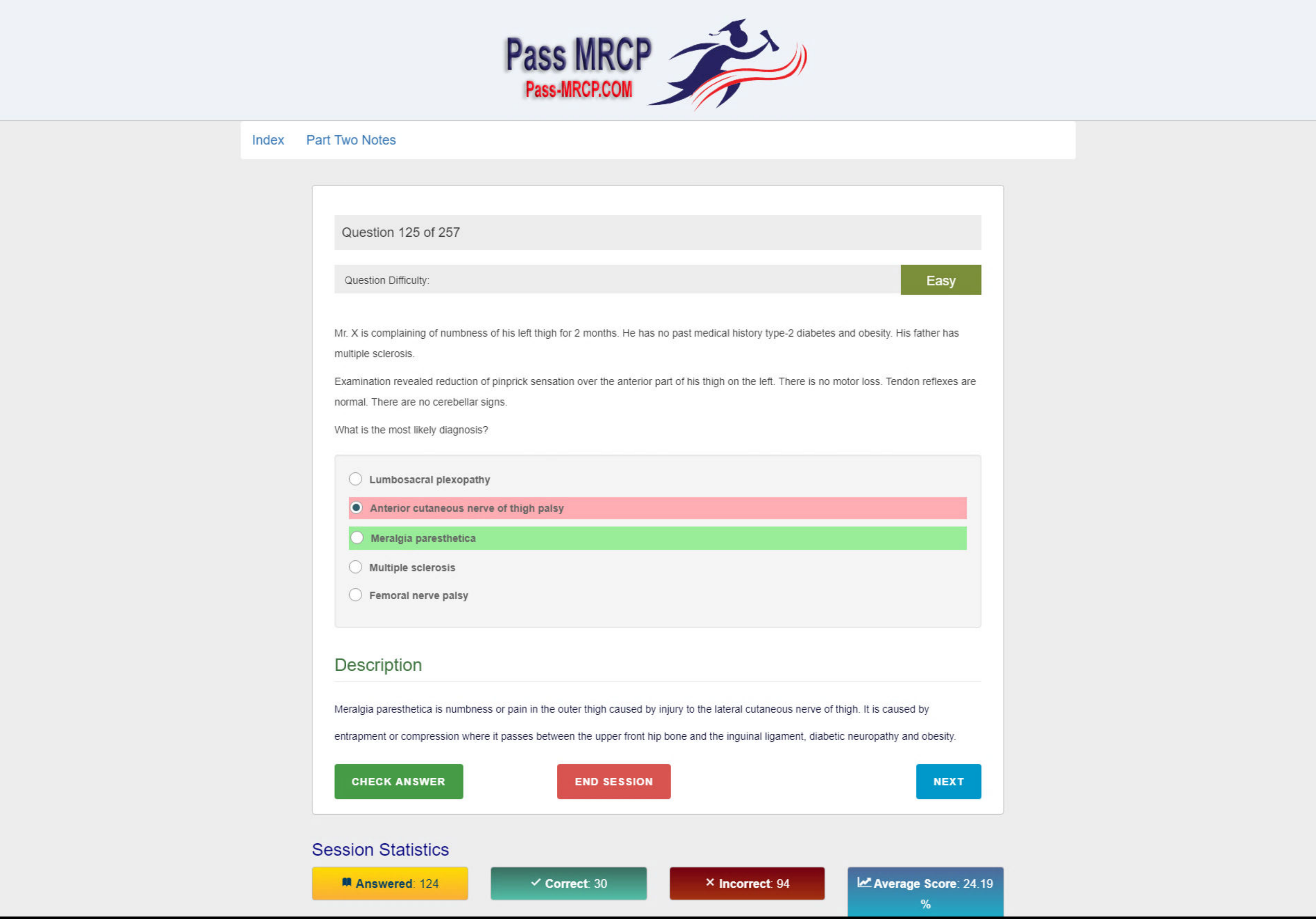
○ **Visual evoked potentials**
○ **Electroencephalography**
● **CT head**
○ **Chest x ray**
○ **Liver function tests**

Description

This patient has sporadic Creutzfeldt-Jakob disease. CJD is a degenerative neurological disorder that is incurable and invariably fatal. CJD is previously called a human form of mad cow disease (bovine spongiform encephalopathy).

Sporadic (sCJD) accounts for 85% of cases of CJD. Signs and symptoms include:

- Median age at death is 68 years
- Median duration of illness is 4-5 months
- Rapidly progressive dementia
- Myoclonus
- Ataxia and seizures
- Speech impairment
- Hallucinations
- Electroencephalography shows the characteristic triphasic spikes



Question 125 of 257

Question Difficulty: Easy

Mr. X is complaining of numbness of his left thigh for 2 months. He has no past medical history type-2 diabetes and obesity. His father has multiple sclerosis.

Examination revealed reduction of pinprick sensation over the anterior part of his thigh on the left. There is no motor loss. Tendon reflexes are normal. There are no cerebellar signs.

What is the most likely diagnosis?

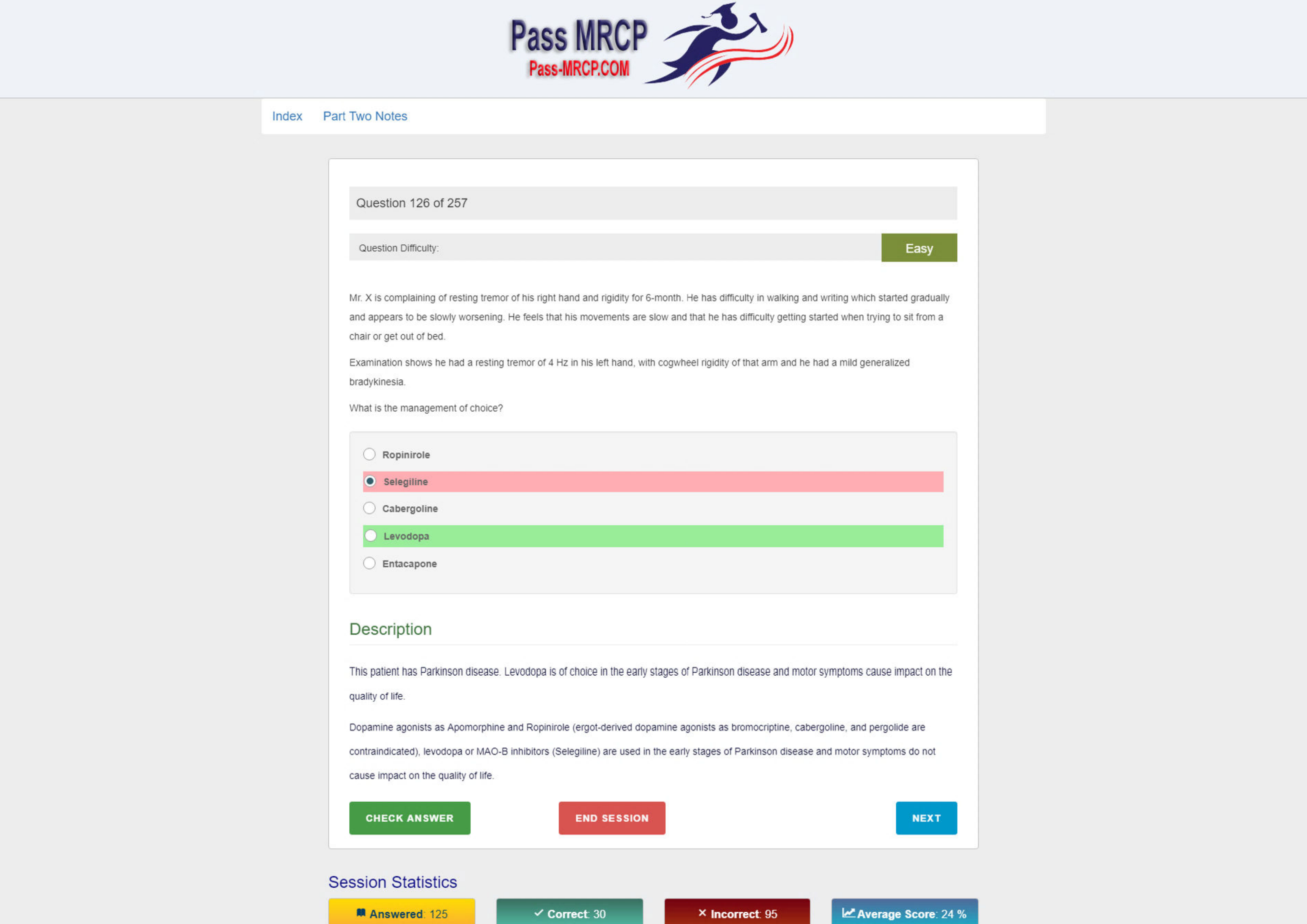
- ○ **Lumbosacral plexopathy**
- ● **Anterior cutaneous nerve of thigh palsy**
- ○ **Meralgia paresthetica**
- ○ **Multiple sclerosis**
- ○ **Femoral nerve palsy**

Description

Meralgia paresthetica is numbness or pain in the outer thigh caused by injury to the lateral cutaneous nerve of thigh. It is caused by entrapment or compression where it passes between the upper front hip bone and the inguinal ligament, diabetic neuropathy and obesity.

Session Statistics

Answered: 124
✓ **Correct**: 30
× **Incorrect**: 94
Average Score: 24.19 %



Question 126 of 257

Question Difficulty: **Easy**

Mr. X is complaining of resting tremor of his right hand and rigidity for 6-month. He has difficulty in walking and writing which started gradually and appears to be slowly worsening. He feels that his movements are slow and that he has difficulty getting started when trying to sit from a chair or get out of bed.

Examination shows he had a resting tremor of 4 Hz in his left hand, with cogwheel rigidity of that arm and he had a mild generalized bradykinesia.

What is the management of choice?

- ○ **Ropinirole**
- ● **Selegiline**
- ○ **Cabergoline**
- ○ **Levodopa**
- ○ **Entacapone**

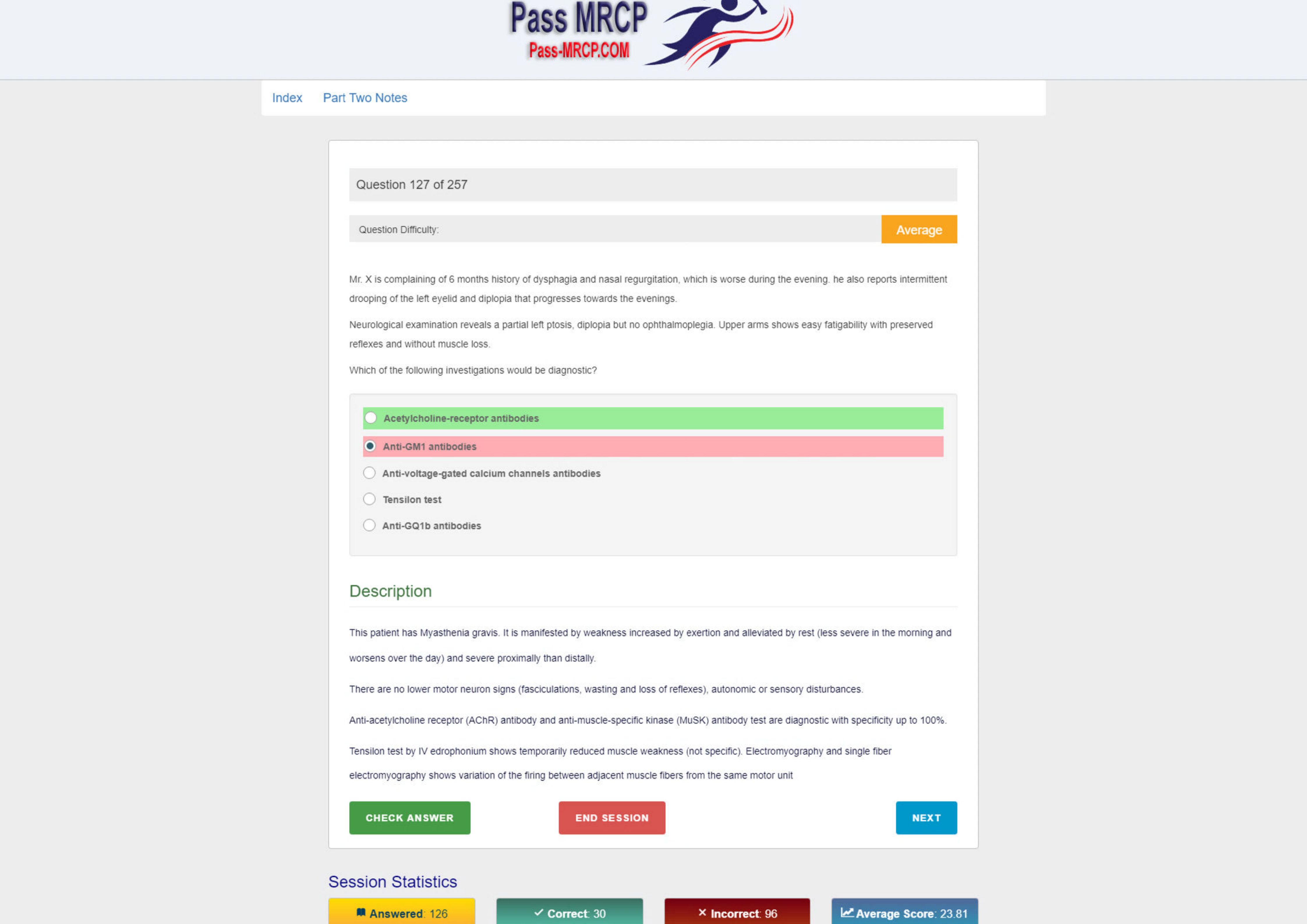
Description

This patient has Parkinson disease. Levodopa is of choice in the early stages of Parkinson disease and motor symptoms cause impact on the quality of life.

Dopamine agonists as Apomorphine and Ropinirole (ergot-derived dopamine agonists as bromocriptine, cabergoline, and pergolide are contraindicated), levodopa or MAO-B inhibitors (Selegiline) are used in the early stages of Parkinson disease and motor symptoms do not cause impact on the quality of life.

Session Statistics

Answered: 125
✓ **Correct**: 30
✕ **Incorrect**: 95
Average Score: 24 %



Question 127 of 257

Question Difficulty: Average

Mr. X is complaining of 6 months history of dysphagia and nasal regurgitation, which is worse during the evening. he also reports intermittent drooping of the left eyelid and diplopia that progresses towards the evenings.

Neurological examination reveals a partial left ptosis, diplopia but no ophthalmoplegia. Upper arms shows easy fatigability with preserved reflexes and without muscle loss.

Which of the following investigations would be diagnostic?

- ○ **Acetylcholine-receptor antibodies**
- ● **Anti-GM1 antibodies**
- ○ **Anti-voltage-gated calcium channels antibodies**
- ○ **Tensilon test**
- ○ **Anti-GQ1b antibodies**

Description

This patient has Myasthenia gravis. It is manifested by weakness increased by exertion and alleviated by rest (less severe in the morning and worsens over the day) and severe proximally than distally.

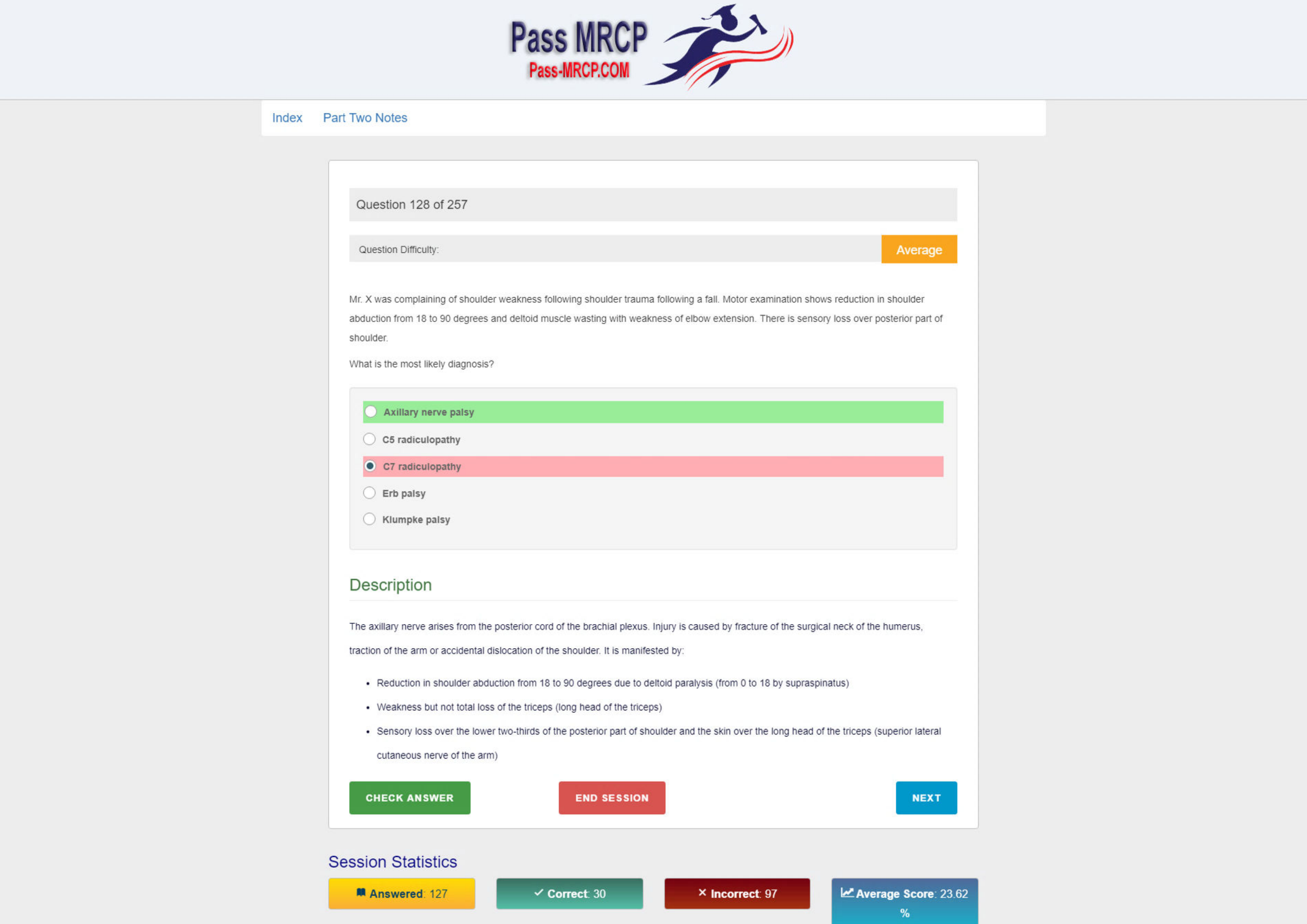
There are no lower motor neuron signs (fasciculations, wasting and loss of reflexes), autonomic or sensory disturbances.

Anti-acetylcholine receptor (AChR) antibody and anti-muscle-specific kinase (MuSK) antibody test are diagnostic with specificity up to 100%.

Tensilon test by IV edrophonium shows temporarily reduced muscle weakness (not specific). Electromyography and single fiber electromyography shows variation of the firing between adjacent muscle fibers from the same motor unit

Session Statistics

Answered: 126
Correct: 30
Incorrect: 96
Average Score: 23.81



Question 128 of 257

Question Difficulty: Average

Mr. X was complaining of shoulder weakness following shoulder trauma following a fall. Motor examination shows reduction in shoulder abduction from 18 to 90 degrees and deltoid muscle wasting with weakness of elbow extension. There is sensory loss over posterior part of shoulder.

What is the most likely diagnosis?

○ **Axillary nerve palsy**
○ **C5 radiculopathy**
● **C7 radiculopathy**
○ **Erb palsy**
○ **Klumpke palsy**

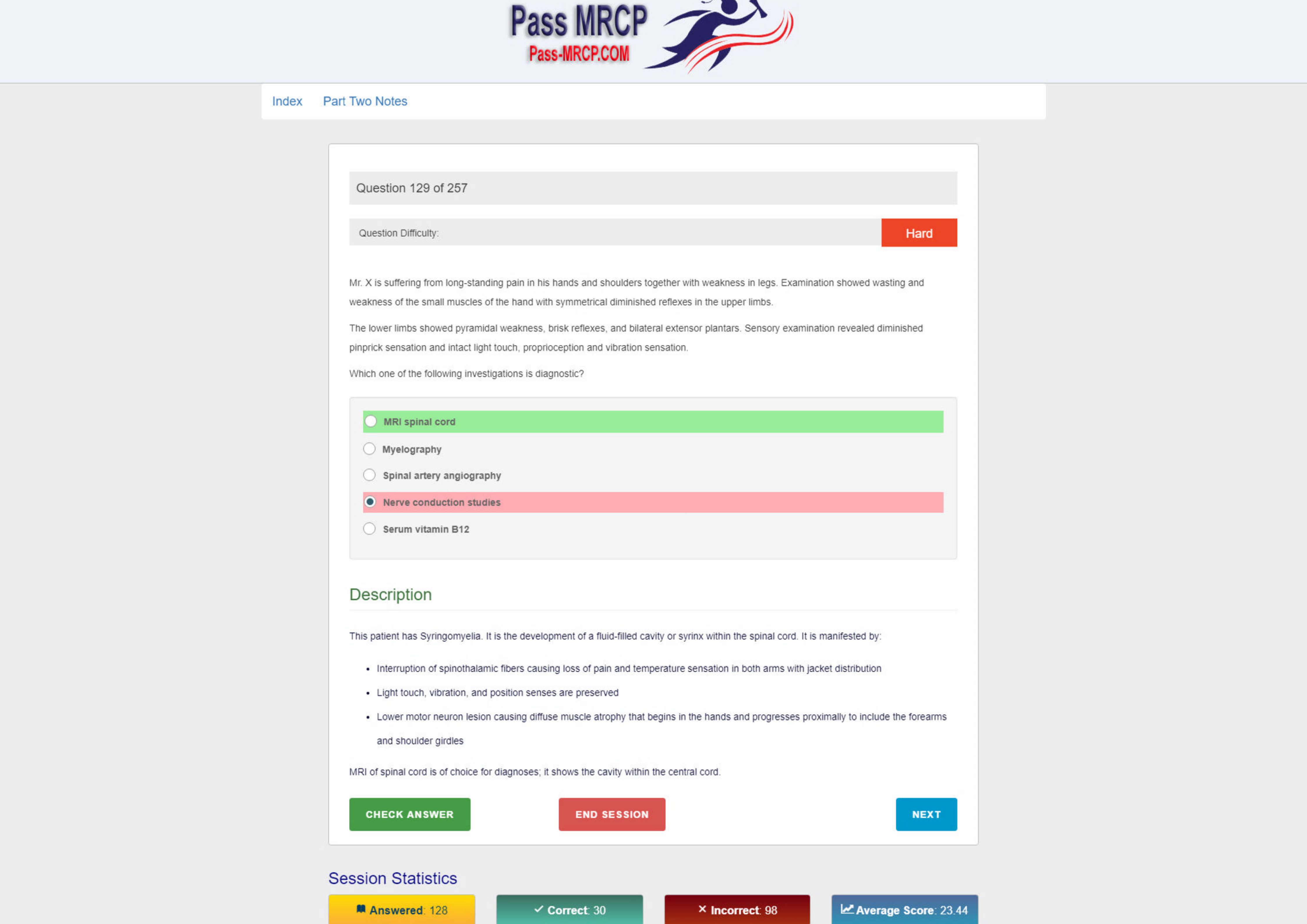
Description

The axillary nerve arises from the posterior cord of the brachial plexus. Injury is caused by fracture of the surgical neck of the humerus, traction of the arm or accidental dislocation of the shoulder. It is manifested by:

- Reduction in shoulder abduction from 18 to 90 degrees due to deltoid paralysis (from 0 to 18 by supraspinatus)
- Weakness but not total loss of the triceps (long head of the triceps)
- Sensory loss over the lower two-thirds of the posterior part of shoulder and the skin over the long head of the triceps (superior lateral cutaneous nerve of the arm)

Session Statistics

Answered: 127
Correct: 30
Incorrect: 97
Average Score: 23.62 %



Question 129 of 257

Question Difficulty: Hard

Mr. X is suffering from long-standing pain in his hands and shoulders together with weakness in legs. Examination showed wasting and weakness of the small muscles of the hand with symmetrical diminished reflexes in the upper limbs.

The lower limbs showed pyramidal weakness, brisk reflexes, and bilateral extensor plantars. Sensory examination revealed diminished pinprick sensation and intact light touch, proprioception and vibration sensation.

Which one of the following investigations is diagnostic?

○ **MRI spinal cord**
○ **Myelography**
○ **Spinal artery angiography**
● **Nerve conduction studies**
○ **Serum vitamin B12**

Description

This patient has Syringomyelia. It is the development of a fluid-filled cavity or syrinx within the spinal cord. It is manifested by:

- Interruption of spinothalamic fibers causing loss of pain and temperature sensation in both arms with jacket distribution
- Light touch, vibration, and position senses are preserved
- Lower motor neuron lesion causing diffuse muscle atrophy that begins in the hands and progresses proximally to include the forearms and shoulder girdles

MRI of spinal cord is of choice for diagnoses; it shows the cavity within the central cord.

Session Statistics

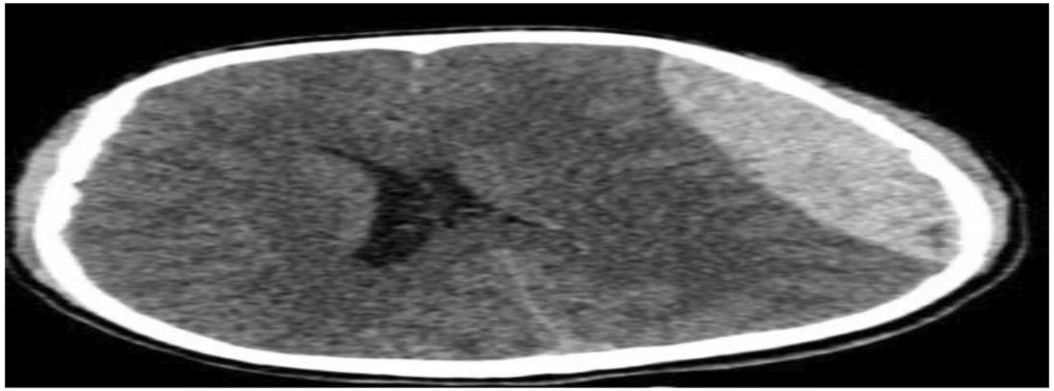
Answered: 128
Correct: 30
Incorrect: 98
Average Score: 23.44

Question 130 of 257

Question Difficulty: **Hard**

Mr. X was admitted due to confusion and recurrent falls for 5 weeks. Between the episodes of fall he is free of symptoms except unremitting headache. He had a recent accident where he had Colles fracture and minor head injury.

Neurological examination shows nystagmus on left lateral gaze. There are exaggerated tendon reflexes on the right side of the body. Brain CT was done and shown in the image.



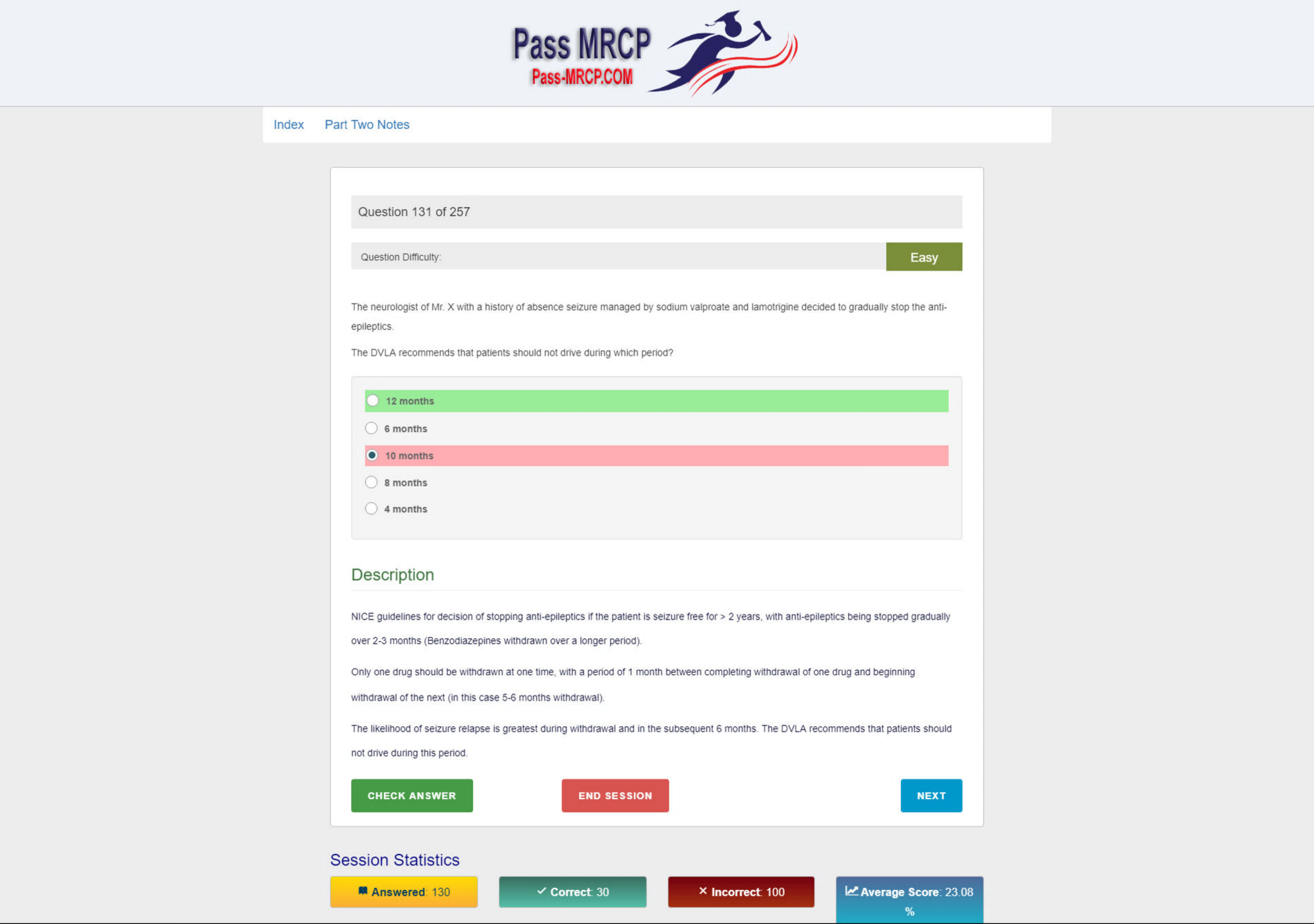
What is the most likely diagnosis?

- ○ **Subdural hemorrhage**
- ○ **Herpes simplex encephalitis**
- ○ **Transient ischemic attacks**
- ● **Alzheimer disease**
- ○ **Subarachnoid hemorrhage**

Description

The CT shows subdural hemorrhage. It results from bleeding between the dura and arachnoid mater. It is manifested by gradually increasing headache and confusion and classically fluctuating conscious level.

CHECK ANSWER **END SESSION** **NEXT**



Question 131 of 257

Question Difficulty: Easy

The neurologist of Mr. X with a history of absence seizure managed by sodium valproate and lamotrigine decided to gradually stop the anti-epileptics.

The DVLA recommends that patients should not drive during which period?

- ○ 12 months
- ○ 6 months
- ● 10 months
- ○ 8 months
- ○ 4 months

Description

NICE guidelines for decision of stopping anti-epileptics if the patient is seizure free for > 2 years, with anti-epileptics being stopped gradually over 2-3 months (Benzodiazepines withdrawn over a longer period).

Only one drug should be withdrawn at one time, with a period of 1 month between completing withdrawal of one drug and beginning withdrawal of the next (in this case 5-6 months withdrawal).

The likelihood of seizure relapse is greatest during withdrawal and in the subsequent 6 months. The DVLA recommends that patients should not drive during this period.

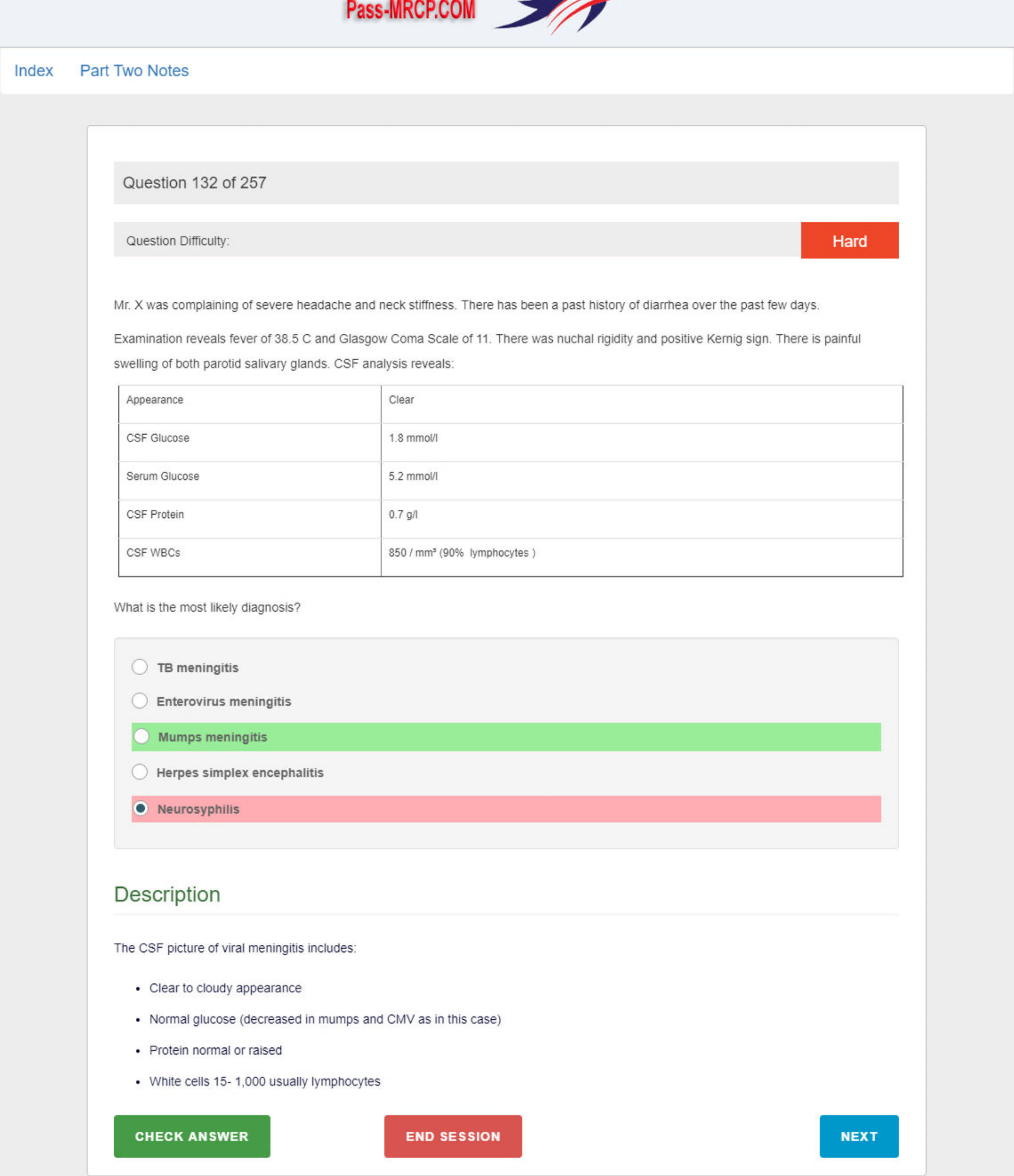
Session Statistics

Answered: 130

✓ Correct: 30

✕ Incorrect: 100

Average Score: 23.08 %



Question 132 of 257

Question Difficulty: **Hard**

Mr. X was complaining of severe headache and neck stiffness. There has been a past history of diarrhea over the past few days.

Examination reveals fever of 38.5 C and Glasgow Coma Scale of 11. There was nuchal rigidity and positive Kernig sign. There is painful swelling of both parotid salivary glands. CSF analysis reveals:

Appearance	Clear
CSF Glucose	1.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	850 / mm³ (90% lymphocytes)

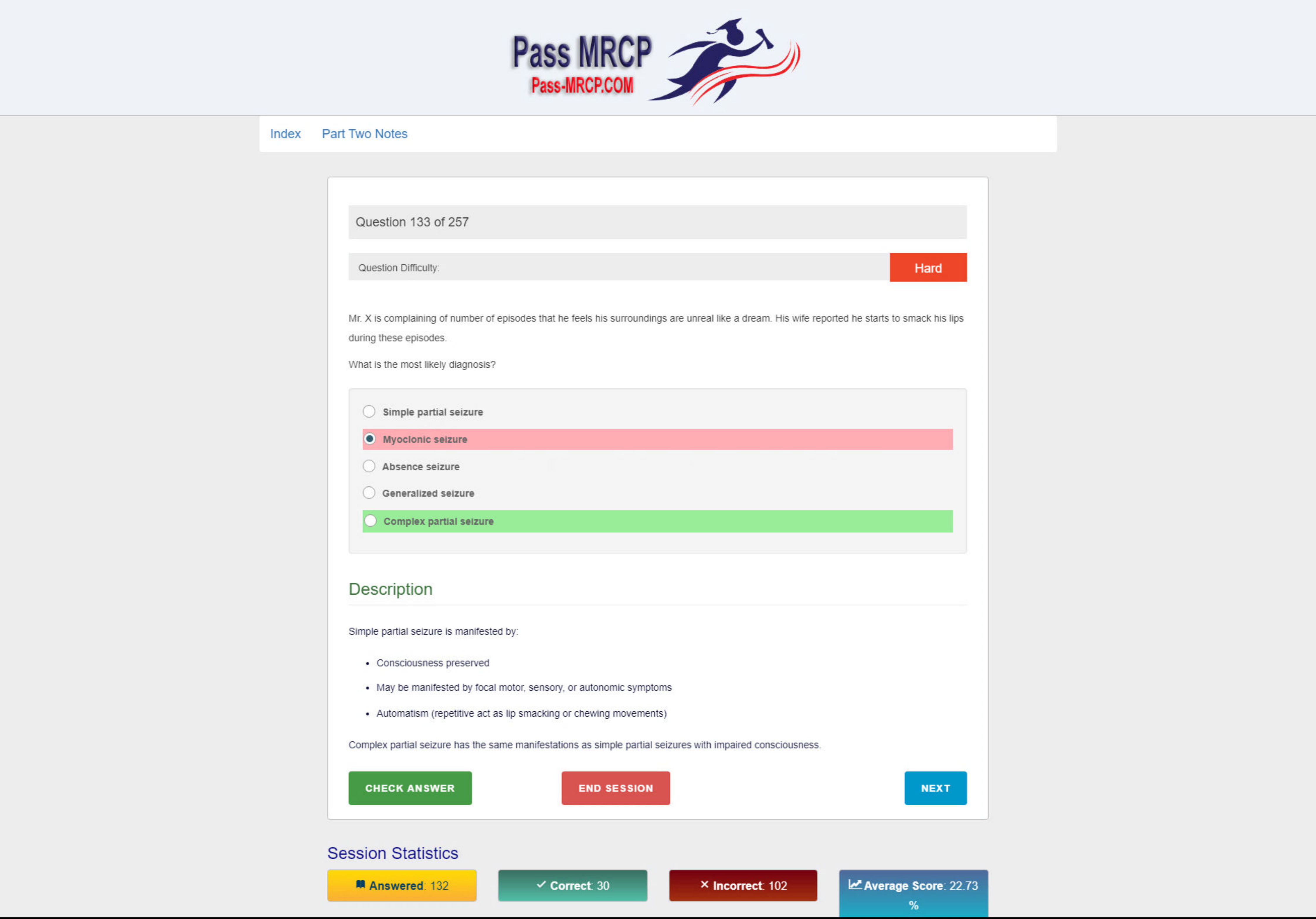
What is the most likely diagnosis?

○ **TB meningitis**
○ **Enterovirus meningitis**
○ **Mumps meningitis**
○ **Herpes simplex encephalitis**
● **Neurosyphilis**

Description

The CSF picture of viral meningitis includes:

- Clear to cloudy appearance
- Normal glucose (decreased in mumps and CMV as in this case)
- Protein normal or raised
- White cells 15- 1,000 usually lymphocytes



Question 133 of 257

Question Difficulty: Hard

Mr. X is complaining of number of episodes that he feels his surroundings are unreal like a dream. His wife reported he starts to smack his lips during these episodes.

What is the most likely diagnosis?

- ○ Simple partial seizure
- ● Myoclonic seizure
- ○ Absence seizure
- ○ Generalized seizure
- ○ Complex partial seizure

Description

Simple partial seizure is manifested by:

- Consciousness preserved
- May be manifested by focal motor, sensory, or autonomic symptoms
- Automatism (repetitive act as lip smacking or chewing movements)

Complex partial seizure has the same manifestations as simple partial seizures with impaired consciousness.

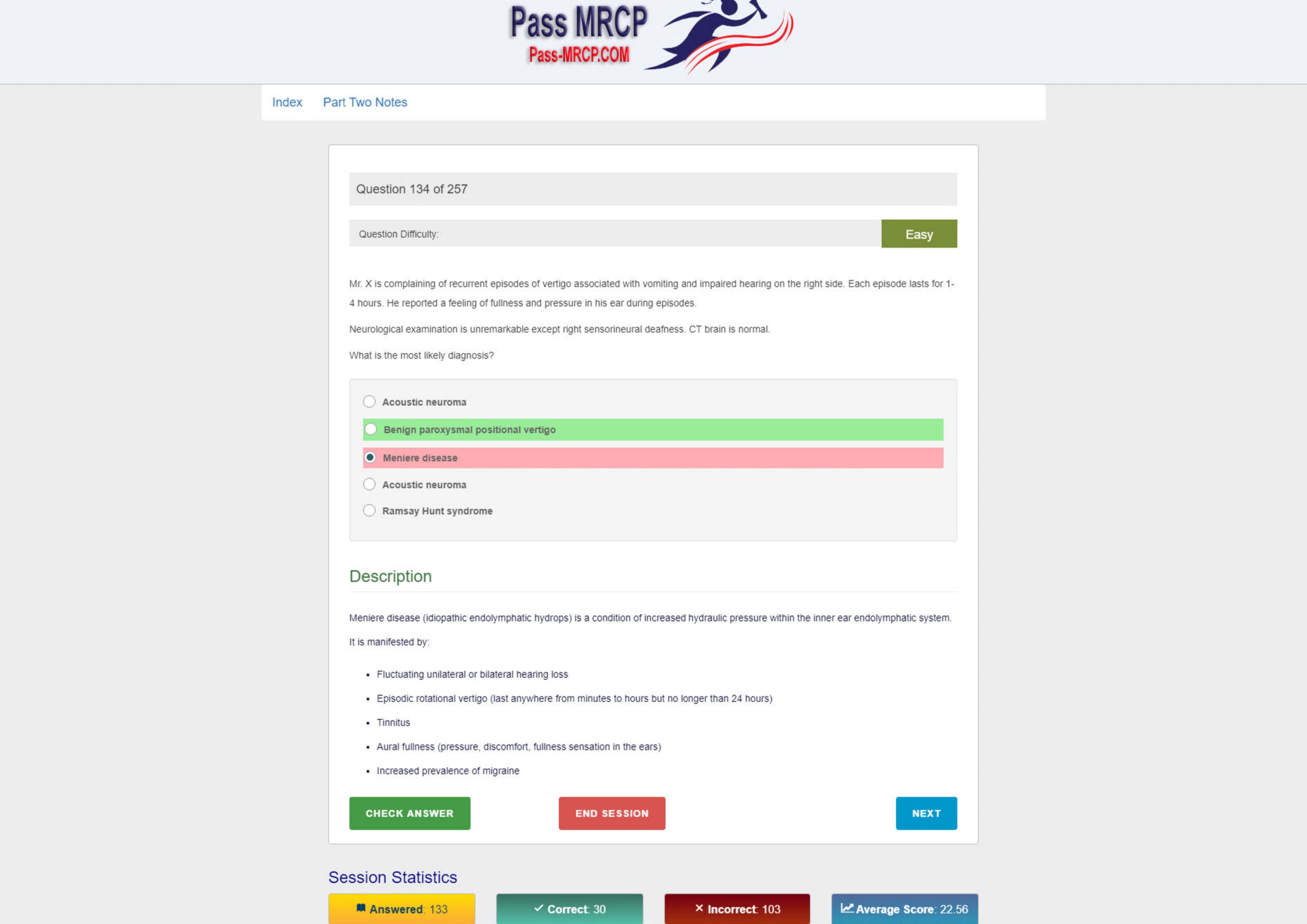
Session Statistics

Answered: 132

✓ Correct: 30

✕ Incorrect: 102

Average Score: 22.73 %



Question 134 of 257

Question Difficulty: Easy

Mr. X is complaining of recurrent episodes of vertigo associated with vomiting and impaired hearing on the right side. Each episode lasts for 1-4 hours. He reported a feeling of fullness and pressure in his ear during episodes.

Neurological examination is unremarkable except right sensorineural deafness. CT brain is normal.

What is the most likely diagnosis?

○ **Acoustic neuroma**
○ **Benign paroxysmal positional vertigo**
● **Meniere disease**
○ **Acoustic neuroma**
○ **Ramsay Hunt syndrome**

Description

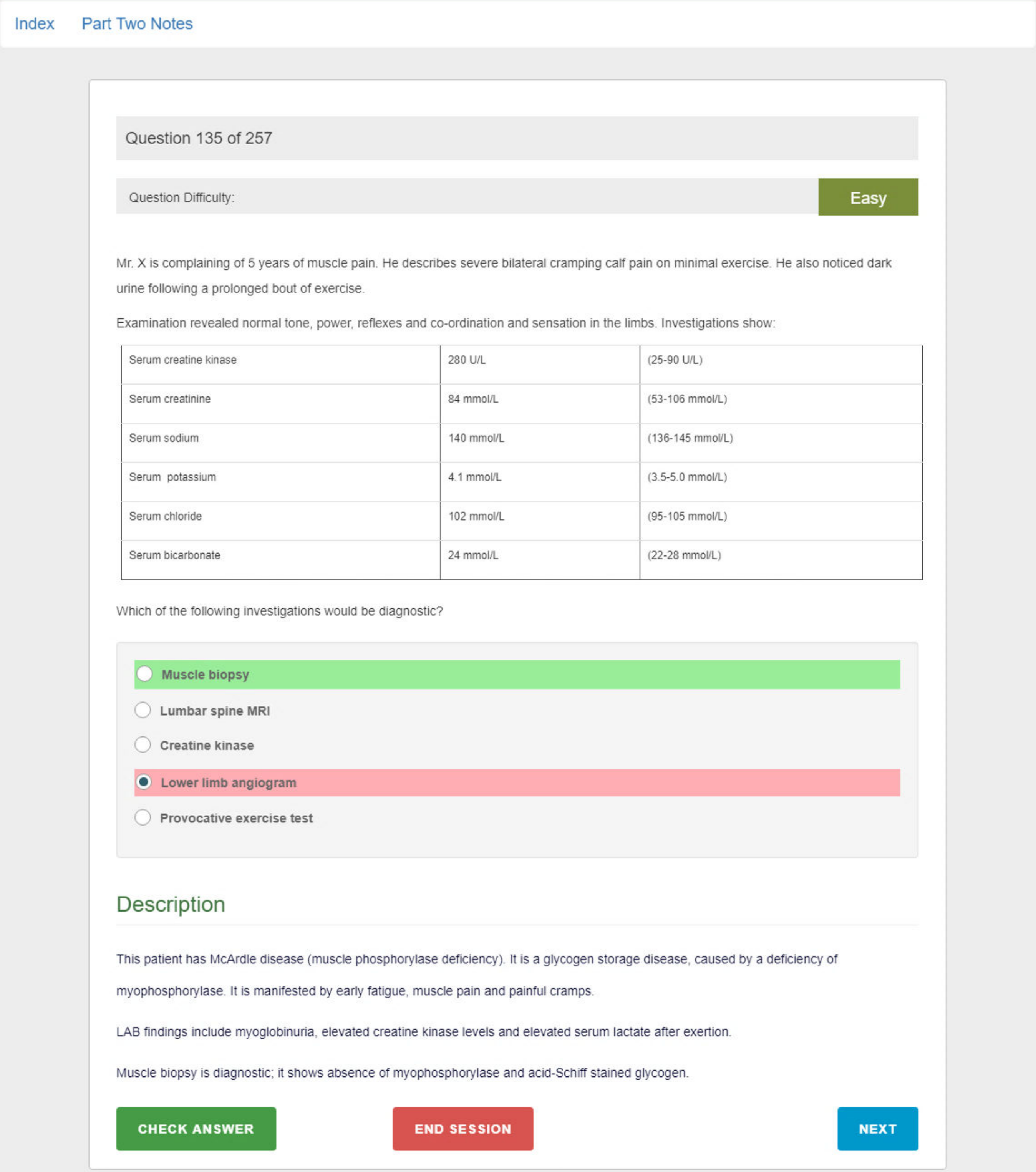
Meniere disease (idiopathic endolymphatic hydrops) is a condition of increased hydraulic pressure within the inner ear endolymphatic system.

It is manifested by:

- Fluctuating unilateral or bilateral hearing loss
- Episodic rotational vertigo (last anywhere from minutes to hours but no longer than 24 hours)
- Tinnitus
- Aural fullness (pressure, discomfort, fullness sensation in the ears)
- Increased prevalence of migraine

Session Statistics

Answered: 133
✓ **Correct**: 30
✕ **Incorrect**: 103
Average Score: 22.56



Question 135 of 257

Question Difficulty: Easy

Mr. X is complaining of 5 years of muscle pain. He describes severe bilateral cramping calf pain on minimal exercise. He also noticed dark urine following a prolonged bout of exercise.

Examination revealed normal tone, power, reflexes and co-ordination and sensation in the limbs. Investigations show:

Serum creatine kinase	280 U/L	(25-90 U/L)
Serum creatinine	84 mmol/L	(53-106 mmol/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.1 mmol/L	(3.5-5.0 mmol/L)
Serum chloride	102 mmol/L	(95-105 mmol/L)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

Which of the following investigations would be diagnostic?

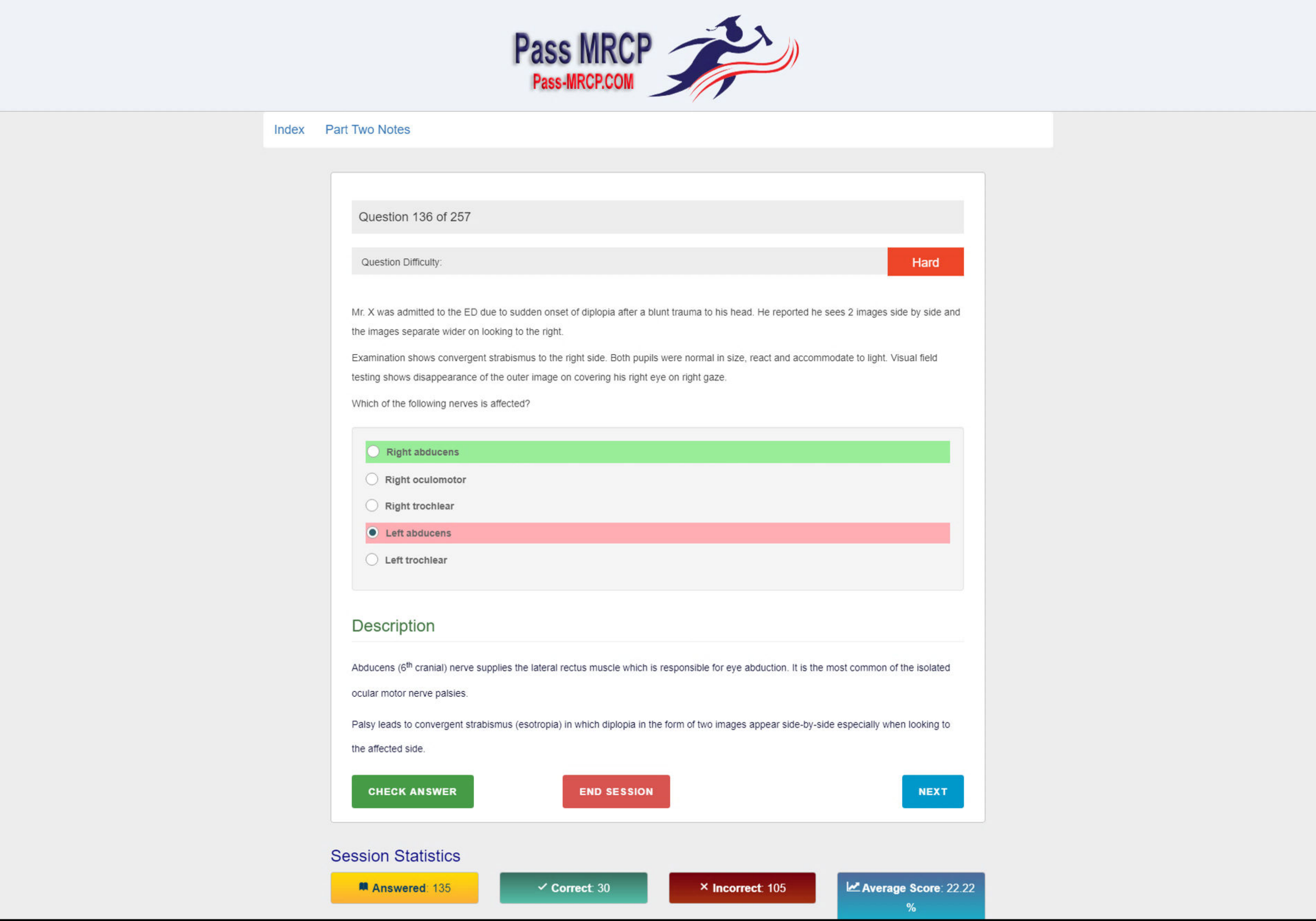
- ○ **Muscle biopsy**
- ○ **Lumbar spine MRI**
- ○ **Creatine kinase**
- ● **Lower limb angiogram**
- ○ **Provocative exercise test**

Description

This patient has McArdle disease (muscle phosphorylase deficiency). It is a glycogen storage disease, caused by a deficiency of myophosphorylase. It is manifested by early fatigue, muscle pain and painful cramps.

LAB findings include myoglobinuria, elevated creatine kinase levels and elevated serum lactate after exertion.

Muscle biopsy is diagnostic; it shows absence of myophosphorylase and acid-Schiff stained glycogen.



Question 136 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to sudden onset of diplopia after a blunt trauma to his head. He reported he sees 2 images side by side and the images separate wider on looking to the right.

Examination shows convergent strabismus to the right side. Both pupils were normal in size, react and accommodate to light. Visual field testing shows disappearance of the outer image on covering his right eye on right gaze.

Which of the following nerves is affected?

- ○ Right abducens
- ○ Right oculomotor
- ○ Right trochlear
- ● Left abducens
- ○ Left trochlear

Description

Abducens (6th cranial) nerve supplies the lateral rectus muscle which is responsible for eye abduction. It is the most common of the isolated ocular motor nerve palsies.

Palsy leads to convergent strabismus (esotropia) in which diplopia in the form of two images appear side-by-side especially when looking to the affected side.

Session Statistics

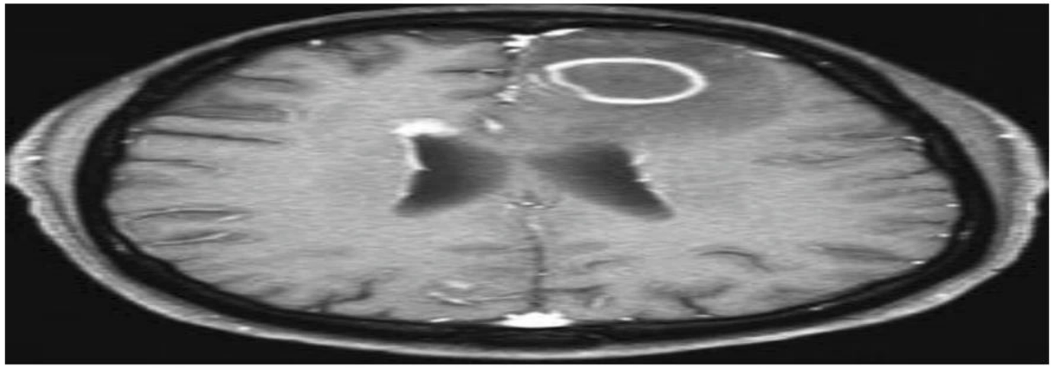
Answered: 135
Correct: 30
Incorrect: 105
Average Score: 22.22 %

Question 137 of 257

Question Difficulty: Average

Mr. X was admitted due to confusion and seizures. He also reported progressive visual loss on his left eye. He has a history of HIV and recent CD4 cells count was 50/ul.

Examination shows right sided weakness and tingling. Brain MRI is shown in the image. Fundoscopy shows left retinal mass.



What is the most likely diagnosis?

- ○ **Toxoplasmosis**
- ○ **Progressive multifocal leucoencephalopathy**
- ○ **Lymphoma**
- ○ **HIV encephalopathy**
- ● **Tuberculosis**

Description

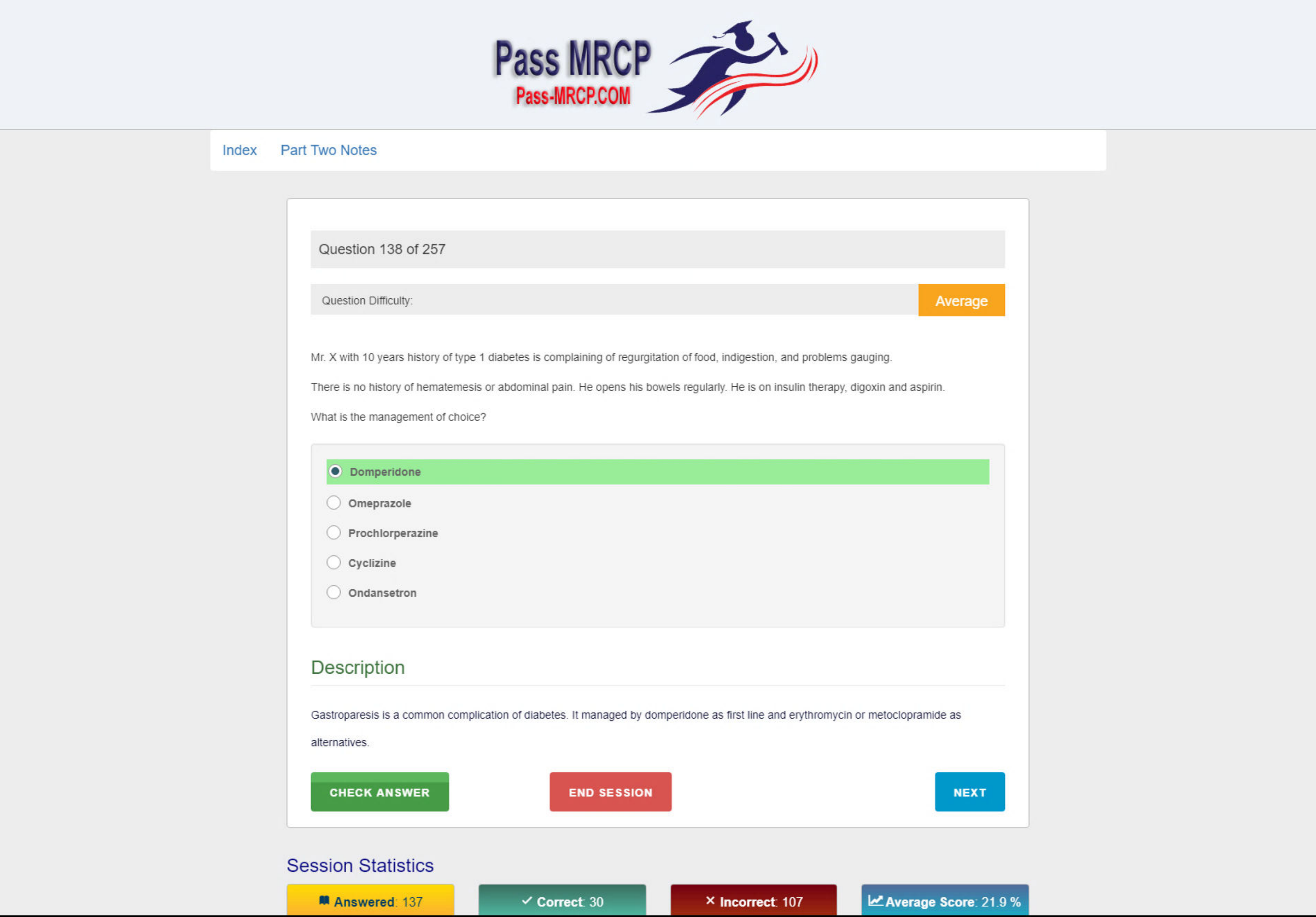
Toxoplasma gondii is a protozoon which infects the body via the GI tract, lung or broken skin. Its oocytes release trophozoites which migrate widely around the body including to the eye, brain and muscle.

Acute toxoplasmosis is often asymptomatic; it may be manifested by influenza-like disease, swollen lymph nodes and muscle aches

Immunocompromised cases may develop encephalitis, necrotizing retinochoroiditis and neonatal toxoplasmosis.

Brain MRI or CT shows single or multiple ring enhancing lesions.

CHECK ANSWER END SESSION NEXT


Pass MRCP
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Question Difficulty: Average

Mr. X with 10 years history of type 1 diabetes is complaining of regurgitation of food, indigestion, and problems gauging.

There is no history of hematemesis or abdominal pain. He opens his bowels regularly. He is on insulin therapy, digoxin and aspirin.

What is the management of choice?

- ● **Domperidone**
- ○ **Omeprazole**
- ○ **Prochlorperazine**
- ○ **Cyclizine**
- ○ **Ondansetron**

Description

Gastroparesis is a common complication of diabetes. It managed by domperidone as first line and erythromycin or metoclopramide as alternatives.

CHECK ANSWER
END SESSION
NEXT

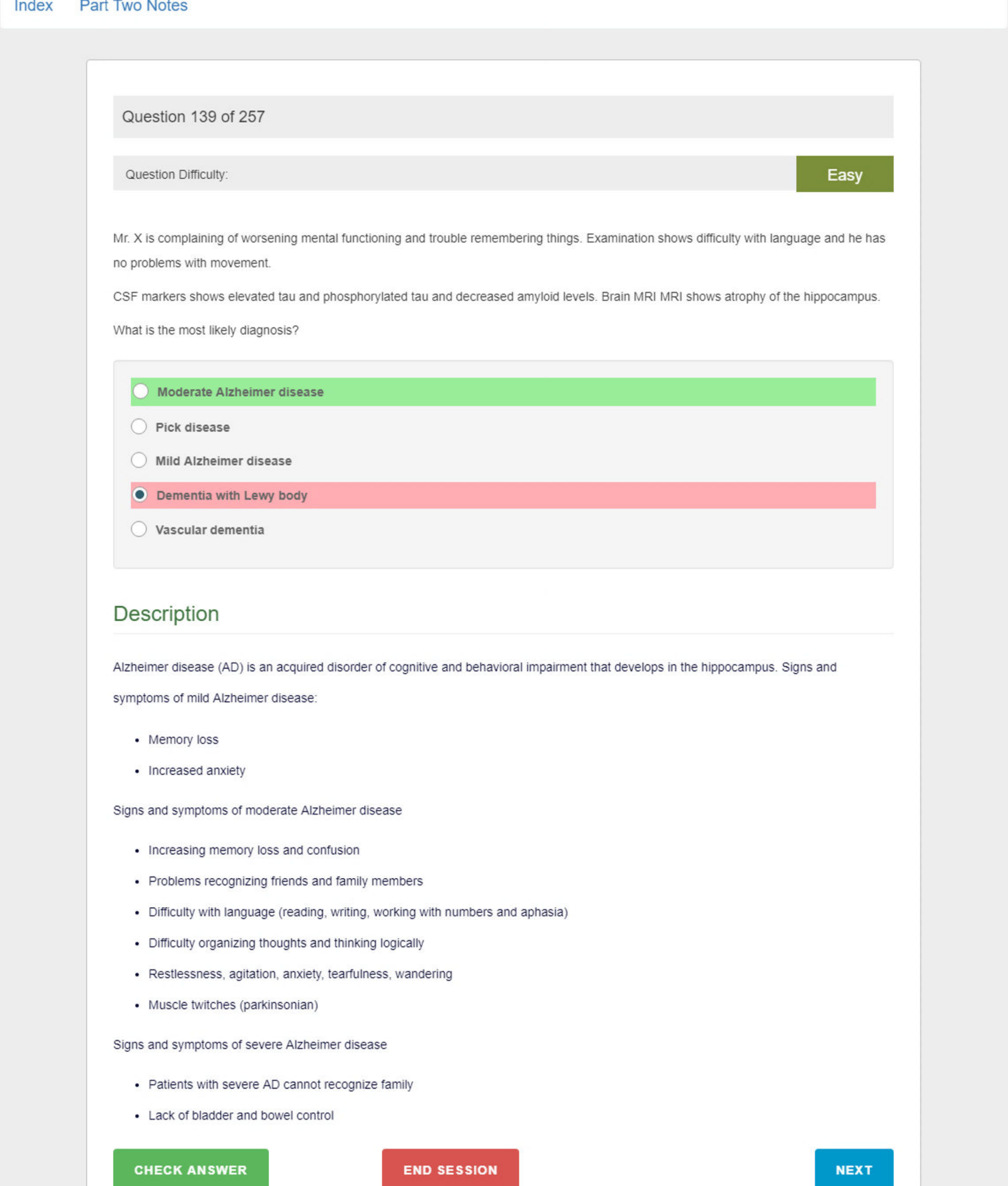
Session Statistics

Answered: 137

✓ **Correct**: 30

✕ **Incorrect**: 107

Average Score: 21.9 %



Question 139 of 257

Question Difficulty: Easy

Mr. X is complaining of worsening mental functioning and trouble remembering things. Examination shows difficulty with language and he has no problems with movement.

CSF markers shows elevated tau and phosphorylated tau and decreased amyloid levels. Brain MRI MRI shows atrophy of the hippocampus.

What is the most likely diagnosis?

○ **Moderate Alzheimer disease**
○ **Pick disease**
○ **Mild Alzheimer disease**
● **Dementia with Lewy body**
○ **Vascular dementia**

Description

Alzheimer disease (AD) is an acquired disorder of cognitive and behavioral impairment that develops in the hippocampus. Signs and symptoms of mild Alzheimer disease:

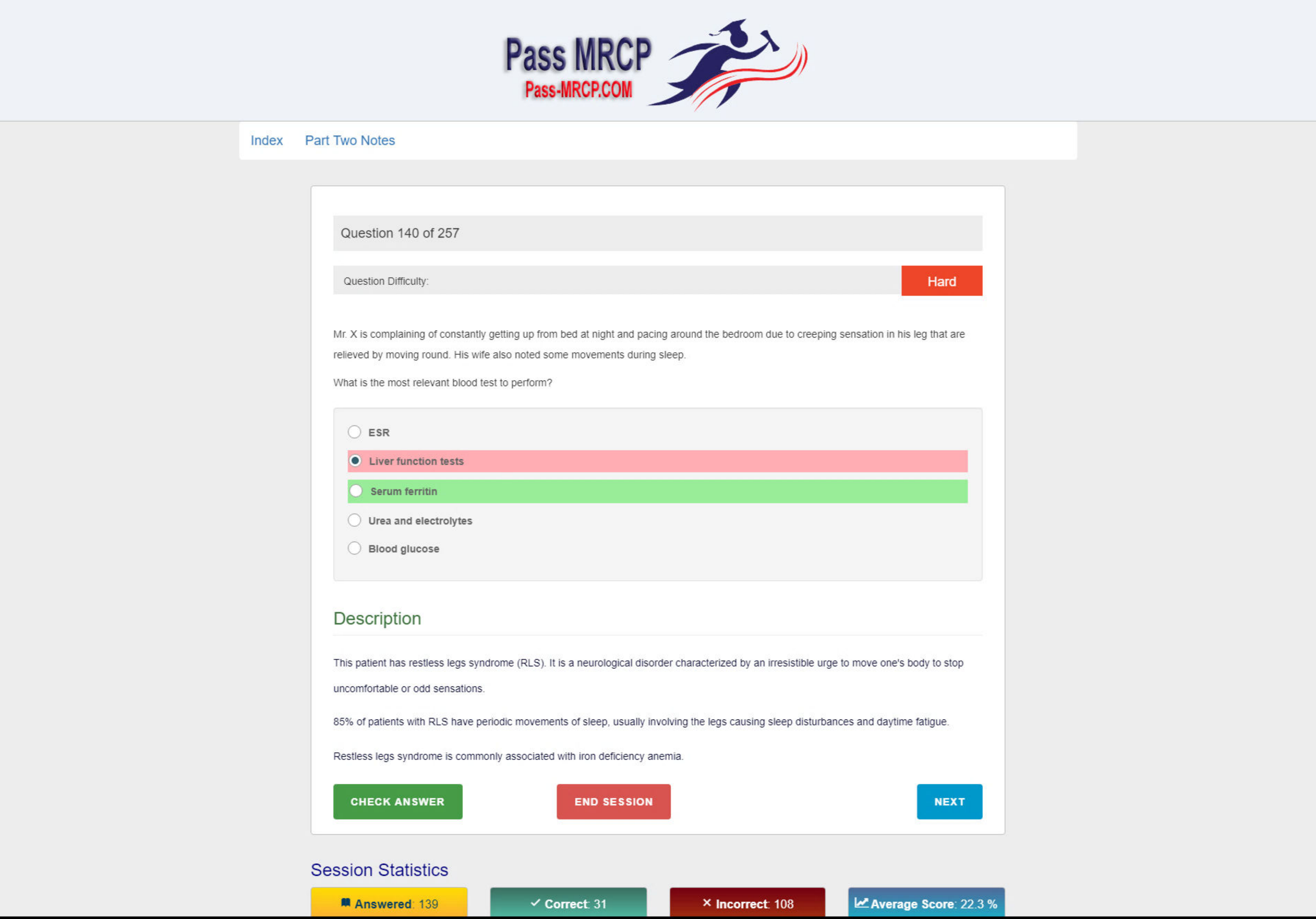
- Memory loss
- Increased anxiety

Signs and symptoms of moderate Alzheimer disease

- Increasing memory loss and confusion
- Problems recognizing friends and family members
- Difficulty with language (reading, writing, working with numbers and aphasia)
- Difficulty organizing thoughts and thinking logically
- Restlessness, agitation, anxiety, tearfulness, wandering
- Muscle twitches (parkinsonian)

Signs and symptoms of severe Alzheimer disease

- Patients with severe AD cannot recognize family
- Lack of bladder and bowel control



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Question Difficulty: Hard

Mr. X is complaining of constantly getting up from bed at night and pacing around the bedroom due to creeping sensation in his leg that are relieved by moving round. His wife also noted some movements during sleep.

What is the most relevant blood test to perform?

- ○ ESR
- ● Liver function tests
- ○ Serum ferritin
- ○ Urea and electrolytes
- ○ Blood glucose

Description

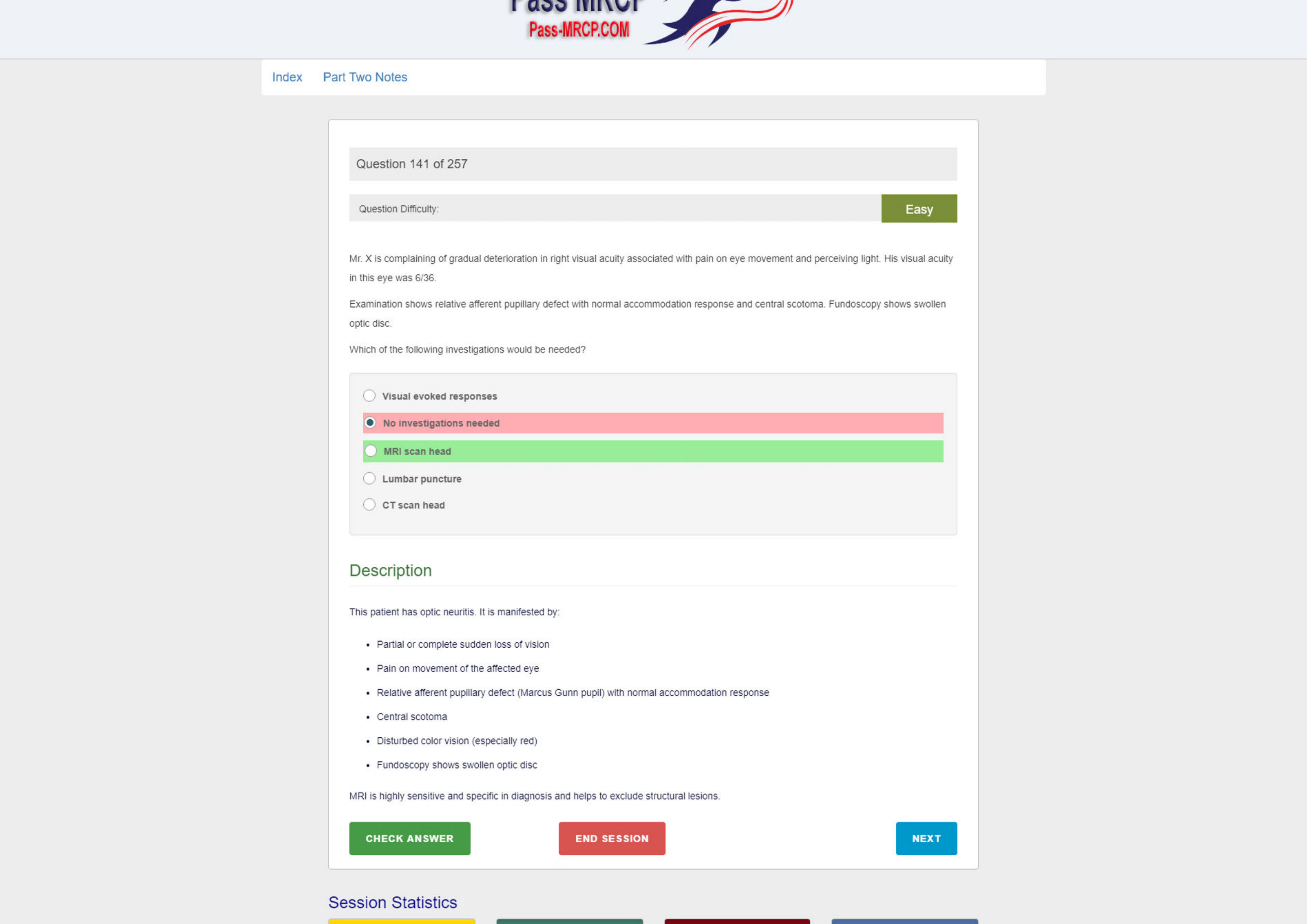
This patient has restless legs syndrome (RLS). It is a neurological disorder characterized by an irresistible urge to move one's body to stop uncomfortable or odd sensations.

85% of patients with RLS have periodic movements of sleep, usually involving the legs causing sleep disturbances and daytime fatigue.

Restless legs syndrome is commonly associated with iron deficiency anemia.

Session Statistics

Answered: 139   ✓ Correct: 31   × Incorrect: 108   Average Score: 22.3 %



Question 141 of 257

Question Difficulty: Easy

Mr. X is complaining of gradual deterioration in right visual acuity associated with pain on eye movement and perceiving light. His visual acuity in this eye was 6/36.

Examination shows relative afferent pupillary defect with normal accommodation response and central scotoma. Fundoscopy shows swollen optic disc.

Which of the following investigations would be needed?

○ **Visual evoked responses**
● **No investigations needed**
○ **MRI scan head**
○ **Lumbar puncture**
○ **CT scan head**

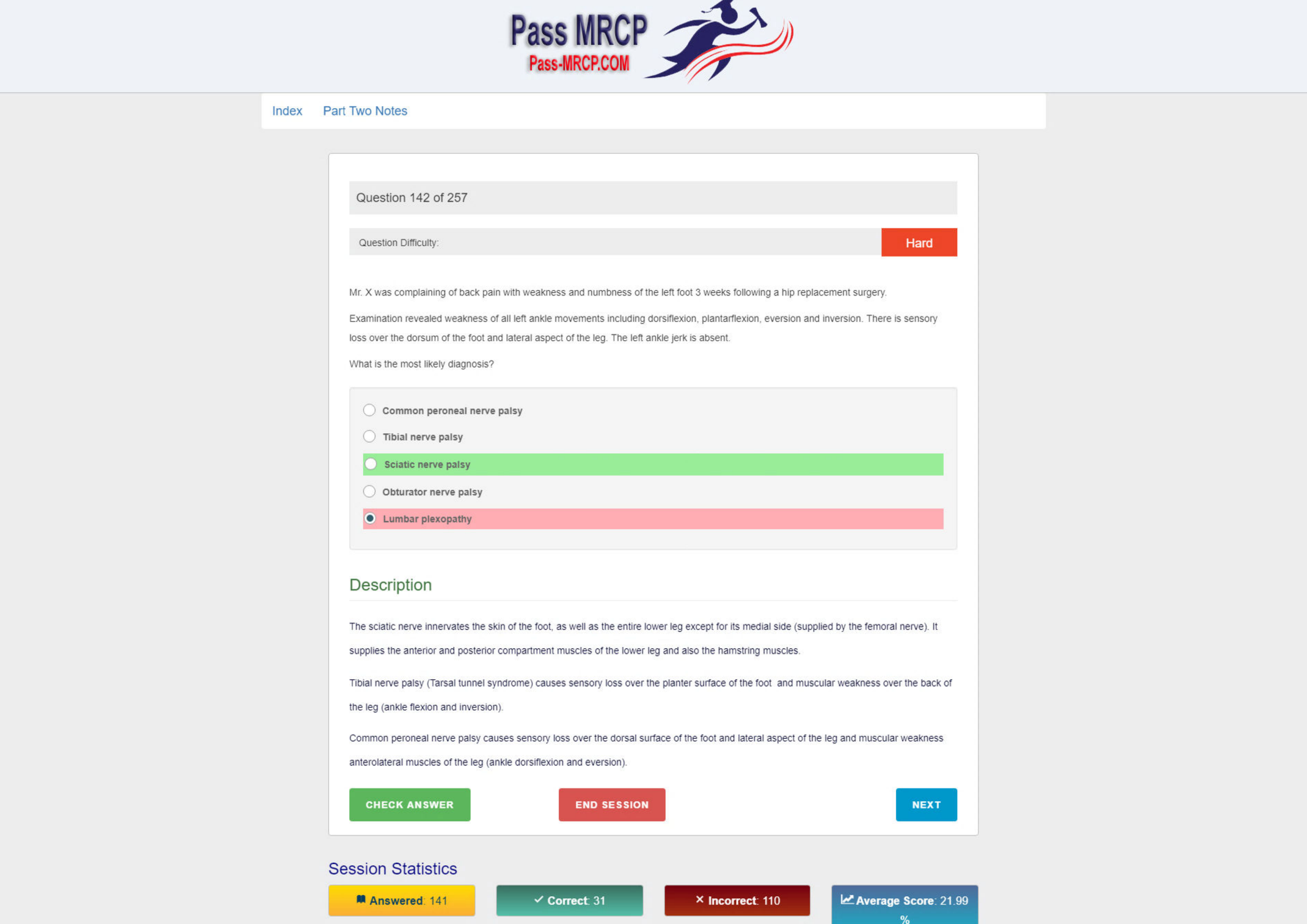
Description

This patient has optic neuritis. It is manifested by:

- Partial or complete sudden loss of vision
- Pain on movement of the affected eye
- Relative afferent pupillary defect (Marcus Gunn pupil) with normal accommodation response
- Central scotoma
- Disturbed color vision (especially red)
- Fundoscopy shows swollen optic disc

MRI is highly sensitive and specific in diagnosis and helps to exclude structural lesions.

Session Statistics



Question 142 of 257

Question Difficulty: Hard

Mr. X was complaining of back pain with weakness and numbness of the left foot 3 weeks following a hip replacement surgery.

Examination revealed weakness of all left ankle movements including dorsiflexion, plantarflexion, eversion and inversion. There is sensory loss over the dorsum of the foot and lateral aspect of the leg. The left ankle jerk is absent.

What is the most likely diagnosis?

- ○ **Common peroneal nerve palsy**
- ○ **Tibial nerve palsy**
- ○ **Sciatic nerve palsy**
- ○ **Obturator nerve palsy**
- ● **Lumbar plexopathy**

Description

The sciatic nerve innervates the skin of the foot, as well as the entire lower leg except for its medial side (supplied by the femoral nerve). It supplies the anterior and posterior compartment muscles of the lower leg and also the hamstring muscles.

Tibial nerve palsy (Tarsal tunnel syndrome) causes sensory loss over the planter surface of the foot and muscular weakness over the back of the leg (ankle flexion and inversion).

Common peroneal nerve palsy causes sensory loss over the dorsal surface of the foot and lateral aspect of the leg and muscular weakness anterolateral muscles of the leg (ankle dorsiflexion and eversion).

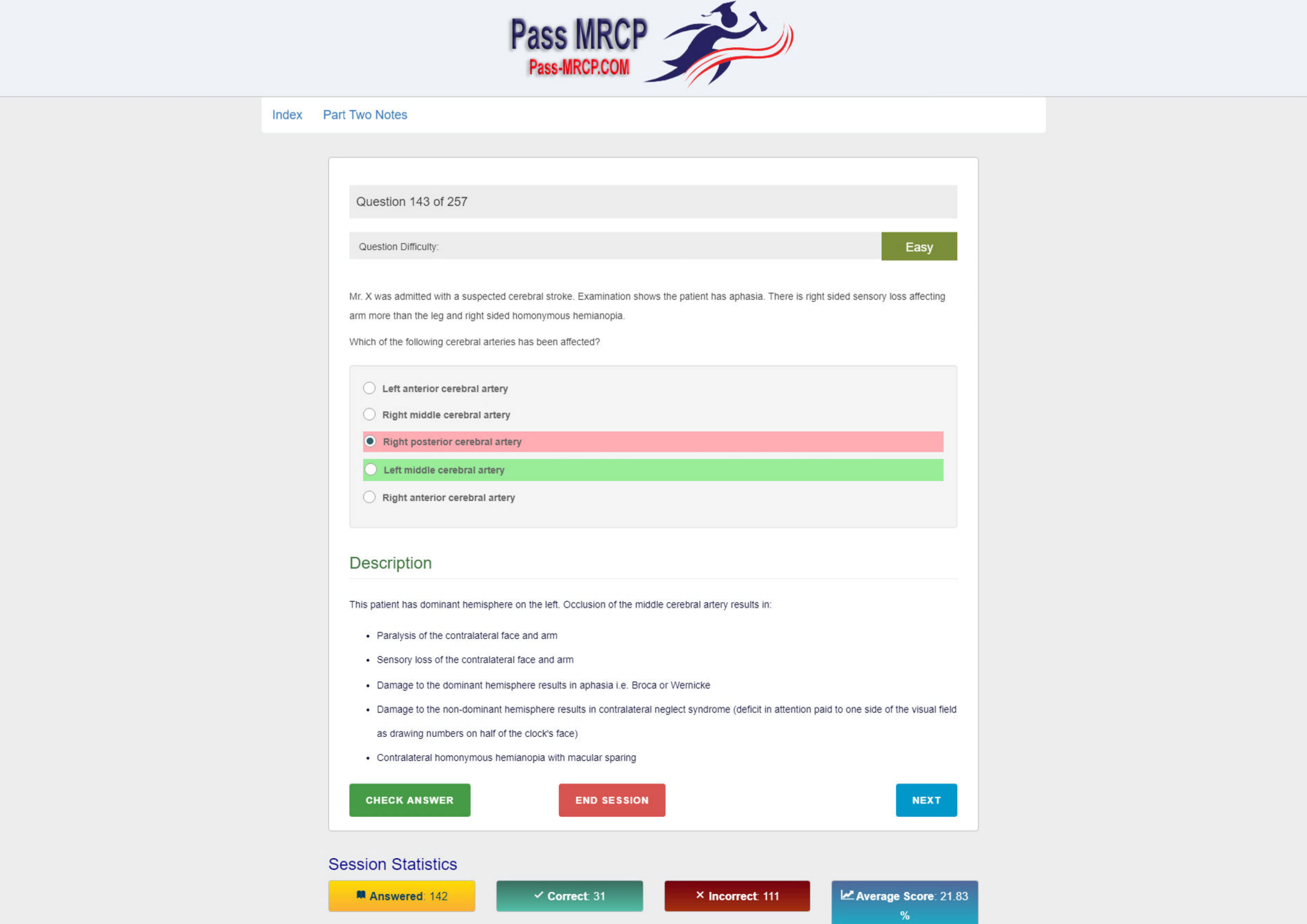
Session Statistics

Answered: 141

✓ **Correct**: 31

× **Incorrect**: 110

Average Score: 21.99 %



Question 143 of 257

Question Difficulty: **Easy**

Mr. X was admitted with a suspected cerebral stroke. Examination shows the patient has aphasia. There is right sided sensory loss affecting arm more than the leg and right sided homonymous hemianopia.

Which of the following cerebral arteries has been affected?

- ○ **Left anterior cerebral artery**
- ○ **Right middle cerebral artery**
- ● **Right posterior cerebral artery**
- ○ **Left middle cerebral artery**
- ○ **Right anterior cerebral artery**

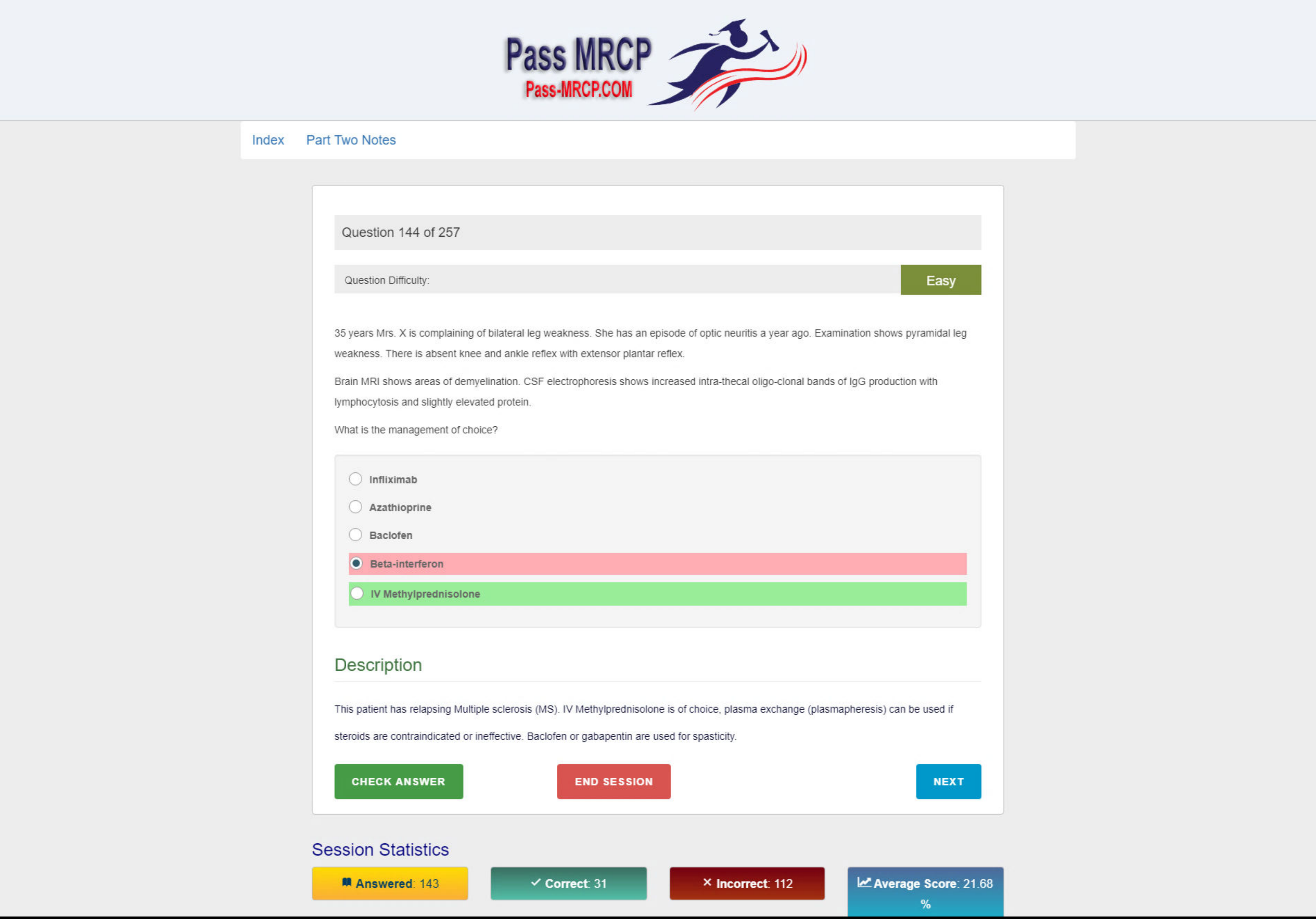
Description

This patient has dominant hemisphere on the left. Occlusion of the middle cerebral artery results in:

- Paralysis of the contralateral face and arm
- Sensory loss of the contralateral face and arm
- Damage to the dominant hemisphere results in aphasia i.e. Broca or Wernicke
- Damage to the non-dominant hemisphere results in contralateral neglect syndrome (deficit in attention paid to one side of the visual field as drawing numbers on half of the clock's face)
- Contralateral homonymous hemianopia with macular sparing

Session Statistics

Answered: 142
✓ **Correct**: 31
✕ **Incorrect**: 111
Average Score: 21.83 %



Question 144 of 257

Question Difficulty: Easy

35 years Mrs. X is complaining of bilateral leg weakness. She has an episode of optic neuritis a year ago. Examination shows pyramidal leg weakness. There is absent knee and ankle reflex with extensor plantar reflex.

Brain MRI shows areas of demyelination. CSF electrophoresis shows increased intra-thecal oligo-clonal bands of IgG production with lymphocytosis and slightly elevated protein.

What is the management of choice?

- ○ **Infliximab**
- ○ **Azathioprine**
- ○ **Baclofen**
- ● **Beta-interferon**
- ○ **IV Methylprednisolone**

Description

This patient has relapsing Multiple sclerosis (MS). IV Methylprednisolone is of choice, plasma exchange (plasmapheresis) can be used if steroids are contraindicated or ineffective. Baclofen or gabapentin are used for spasticity.

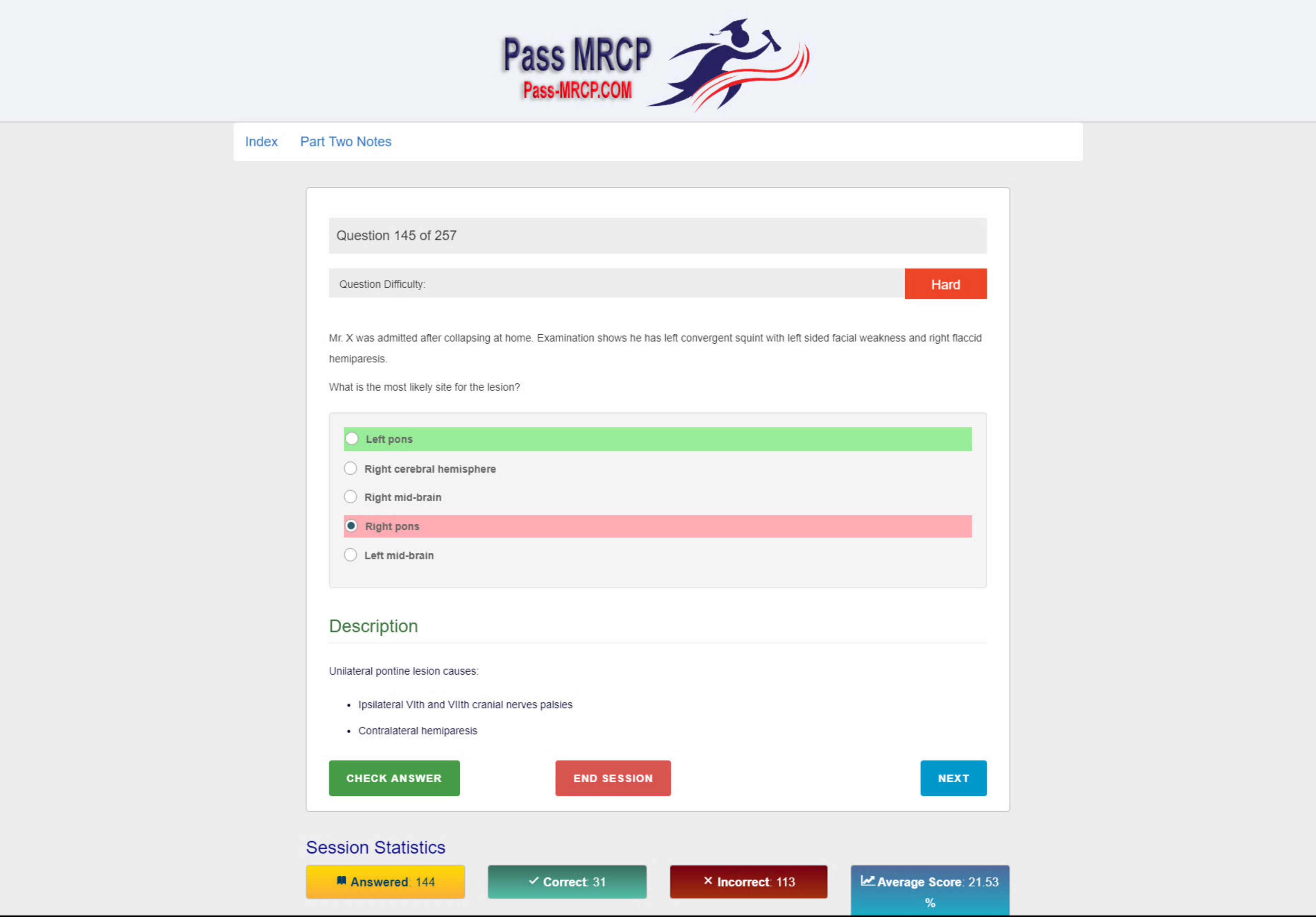
Session Statistics

Answered: 143

✓ **Correct**: 31

✕ **Incorrect**: 112

Average Score: 21.68 %



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Question Difficulty: Hard

Mr. X was admitted after collapsing at home. Examination shows he has left convergent squint with left sided facial weakness and right flaccid hemiparesis.

What is the most likely site for the lesion?

○ Left pons
○ Right cerebral hemisphere
○ Right mid-brain
● Right pons
○ Left mid-brain

Description

Unilateral pontine lesion causes:

- Ipsilateral VIth and VIIth cranial nerves palsies
- Contralateral hemiparesis

Session Statistics

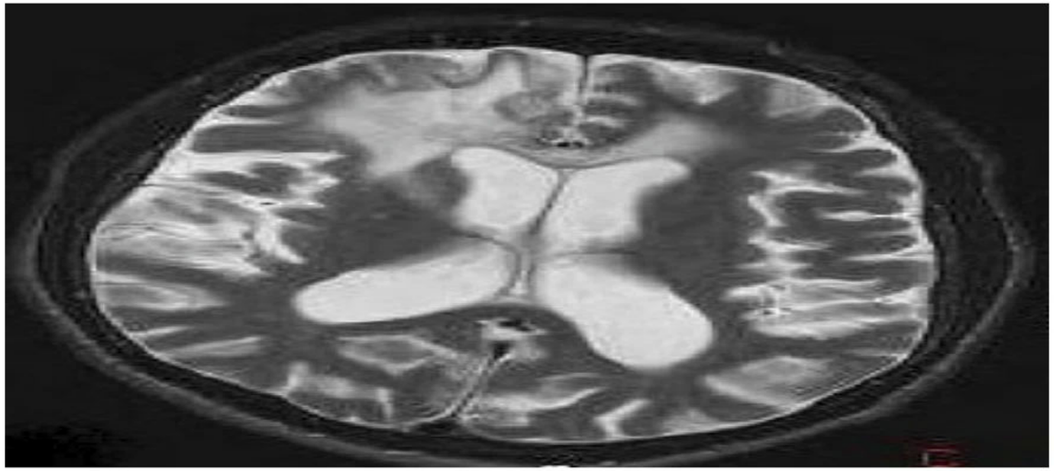
Answered: 144
✓ Correct: 31
✕ Incorrect: 113
Average Score: 21.53 %

Question 146 of 257

Question Difficulty: Easy

Mr. X is suffering from poor concentration, memory loss and increasing clumsiness for 3 months.

Examination shows he has an ataxic gait. He has generalized motor weakness, hyperreflexia and upgoing plantars bilaterally. MRI of the brain is shown in the image.



What is the management of choice?

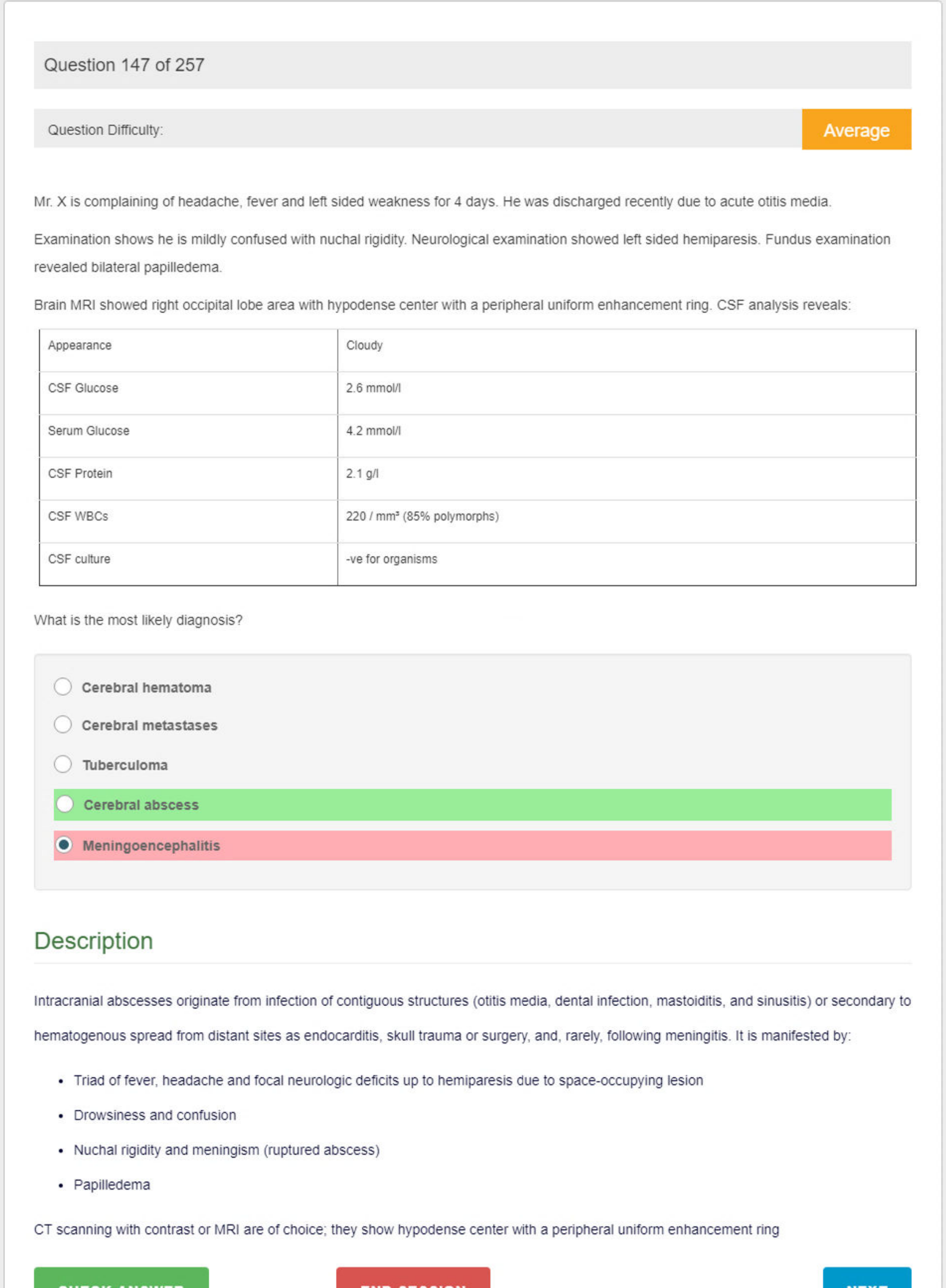
- ○ **IV diazepam**
- ○ **IV penicillin**
- ○ **Oral memantine**
- ○ **Antiretroviral therapy**
- ● **IV acyclovir**

Description

AIDS Dementia Complex (ADC) is one of the most common and clinically important CNS complications of late HIV-1 infection. It is manifested by dementia, behavioral changes (loss of attention and concentration), motor deficits, hyperreflexia and gait instability.

MRI shows widespread cerebral atrophy with widened cortical sulci and enlarged ventricles. Management is by aggressive antiretroviral therapy.

CHECK ANSWER END SESSION NEXT



Question 147 of 257

Question Difficulty: **Average**

Mr. X is complaining of headache, fever and left sided weakness for 4 days. He was discharged recently due to acute otitis media.

Examination shows he is mildly confused with nuchal rigidity. Neurological examination showed left sided hemiparesis. Fundus examination revealed bilateral papilledema.

Brain MRI showed right occipital lobe area with hypodense center with a peripheral uniform enhancement ring. CSF analysis reveals:

Appearance	Cloudy
CSF Glucose	2.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	2.1 g/l
CSF WBCs	220 / mm³ (85% polymorphs)
CSF culture	-ve for organisms

What is the most likely diagnosis?

○ **Cerebral hematoma**

○ **Cerebral metastases**

○ **Tuberculoma**

○ **Cerebral abscess**

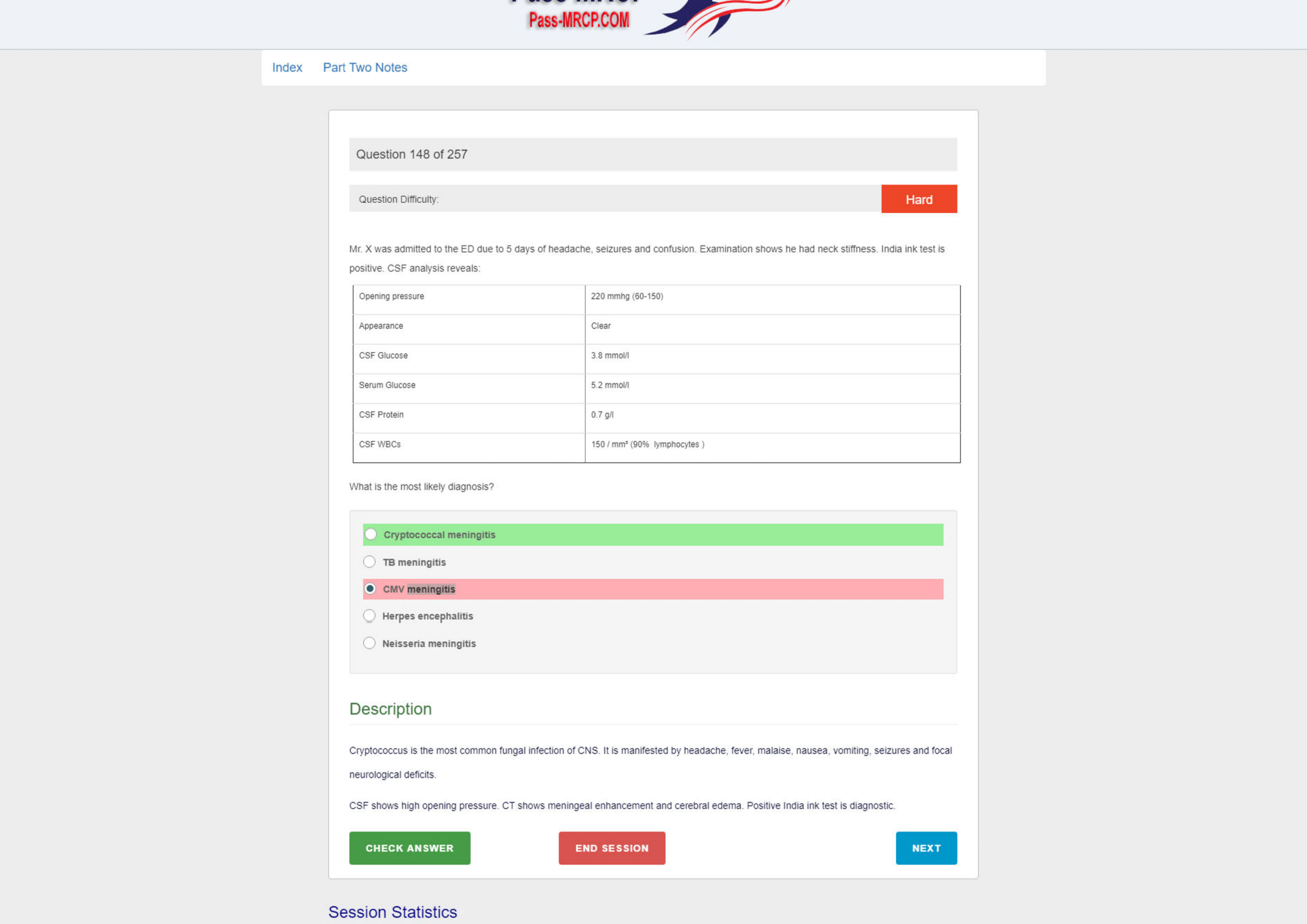
● **Meningoencephalitis**

Description

Intracranial abscesses originate from infection of contiguous structures (otitis media, dental infection, mastoiditis, and sinusitis) or secondary to hematogenous spread from distant sites as endocarditis, skull trauma or surgery, and, rarely, following meningitis. It is manifested by:

- Triad of fever, headache and focal neurologic deficits up to hemiparesis due to space-occupying lesion
- Drowsiness and confusion
- Nuchal rigidity and meningism (ruptured abscess)
- Papilledema

CT scanning with contrast or MRI are of choice; they show hypodense center with a peripheral uniform enhancement ring



Question 148 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to 5 days of headache, seizures and confusion. Examination shows he had neck stiffness. India ink test is positive. CSF analysis reveals:

Opening pressure	220 mmhg (60-150)
Appearance	Clear
CSF Glucose	3.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	150 / mm³ (90% lymphocytes)

What is the most likely diagnosis?

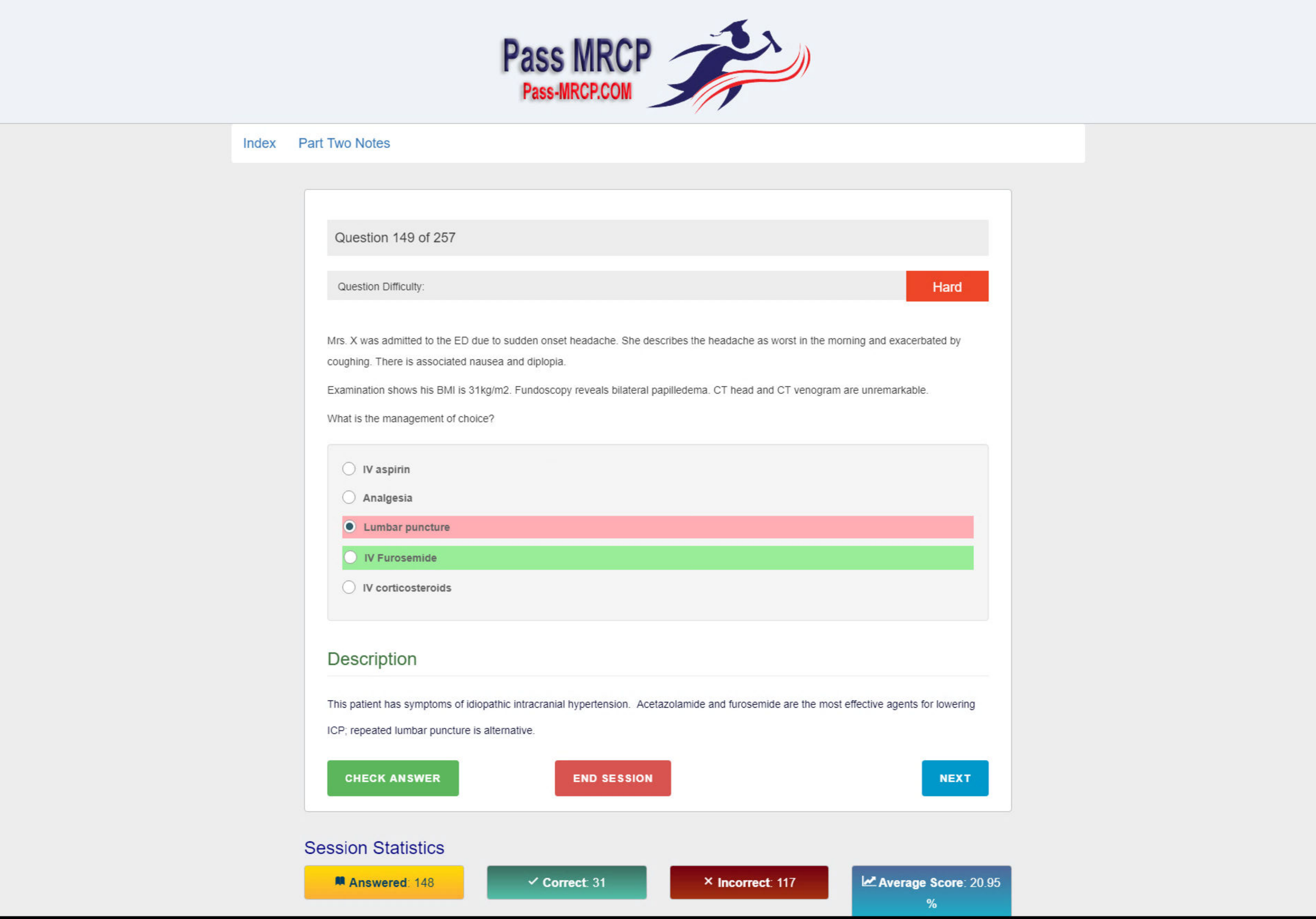
- ○ **Cryptococcal meningitis**
- ○ **TB meningitis**
- ● **CMV meningitis**
- ○ **Herpes encephalitis**
- ○ **Neisseria meningitis**

Description

Cryptococcus is the most common fungal infection of CNS. It is manifested by headache, fever, malaise, nausea, vomiting, seizures and focal neurological deficits.

CSF shows high opening pressure. CT shows meningeal enhancement and cerebral edema. Positive India ink test is diagnostic.

Session Statistics



Question 149 of 257

Question Difficulty: Hard

Mrs. X was admitted to the ED due to sudden onset headache. She describes the headache as worst in the morning and exacerbated by coughing. There is associated nausea and diplopia.

Examination shows his BMI is 31kg/m2. Fundoscopy reveals bilateral papilledema. CT head and CT venogram are unremarkable.

What is the management of choice?

- ○ IV aspirin
- ○ Analgesia
- ● Lumbar puncture
- ○ IV Furosemide
- ○ IV corticosteroids

Description

This patient has symptoms of idiopathic intracranial hypertension. Acetazolamide and furosemide are the most effective agents for lowering ICP; repeated lumbar puncture is alternative.

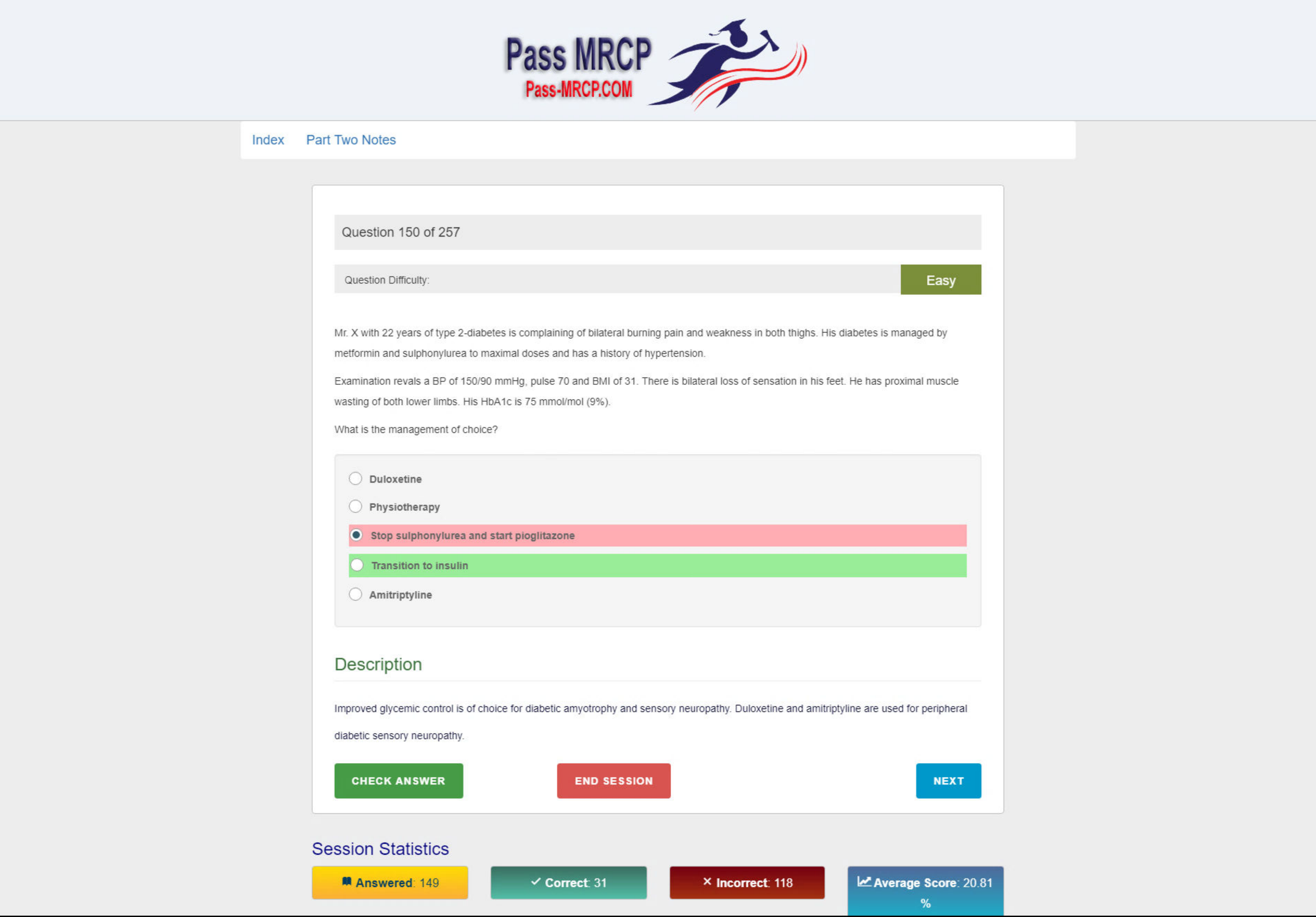
Session Statistics

Answered: 148

✓ **Correct**: 31

× **Incorrect**: 117

Average Score: 20.95 %



Question 150 of 257

Question Difficulty: Easy

Mr. X with 22 years of type 2-diabetes is complaining of bilateral burning pain and weakness in both thighs. His diabetes is managed by metformin and sulphonylurea to maximal doses and has a history of hypertension.

Examination revals a BP of 150/90 mmHg, pulse 70 and BMI of 31. There is bilateral loss of sensation in his feet. He has proximal muscle wasting of both lower limbs. His HbA1c is 75 mmol/mol (9%).

What is the management of choice?

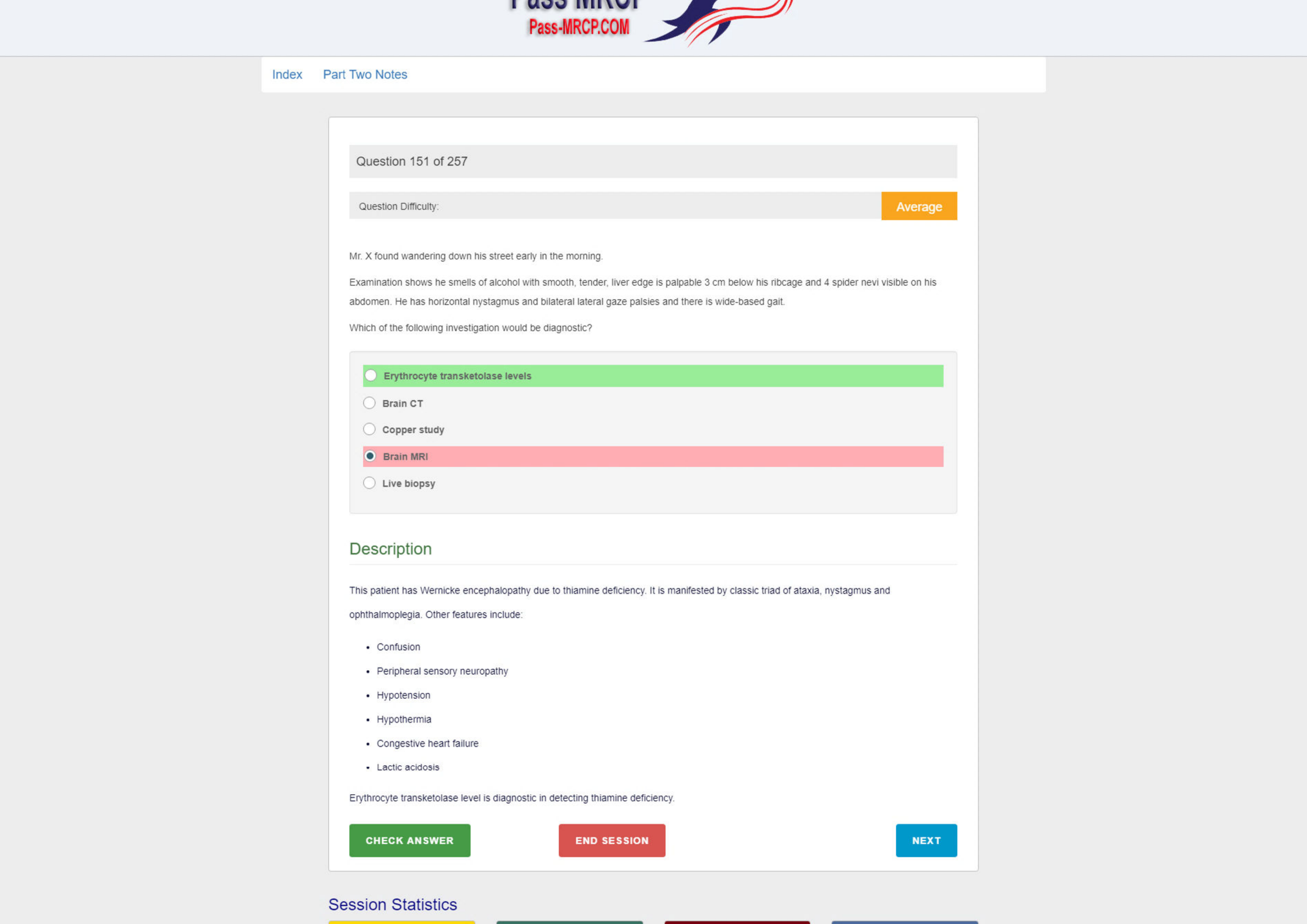
○ **Duloxetine**
○ **Physiotherapy**
● **Stop sulphonylurea and start pioglitazone**
○ **Transition to insulin**
○ **Amitriptyline**

Description

Improved glycemic control is of choice for diabetic amyotrophy and sensory neuropathy. Duloxetine and amitriptyline are used for peripheral diabetic sensory neuropathy.

Session Statistics

Answered: 149
✓ **Correct**: 31
× **Incorrect**: 118
Average Score: 20.81 %



Question 151 of 257

Question Difficulty: Average

Mr. X found wandering down his street early in the morning.

Examination shows he smells of alcohol with smooth, tender, liver edge is palpable 3 cm below his ribcage and 4 spider nevi visible on his abdomen. He has horizontal nystagmus and bilateral lateral gaze palsies and there is wide-based gait.

Which of the following investigation would be diagnostic?

○ **Erythrocyte transketolase levels**
○ **Brain CT**
○ **Copper study**
● **Brain MRI**
○ **Live biopsy**

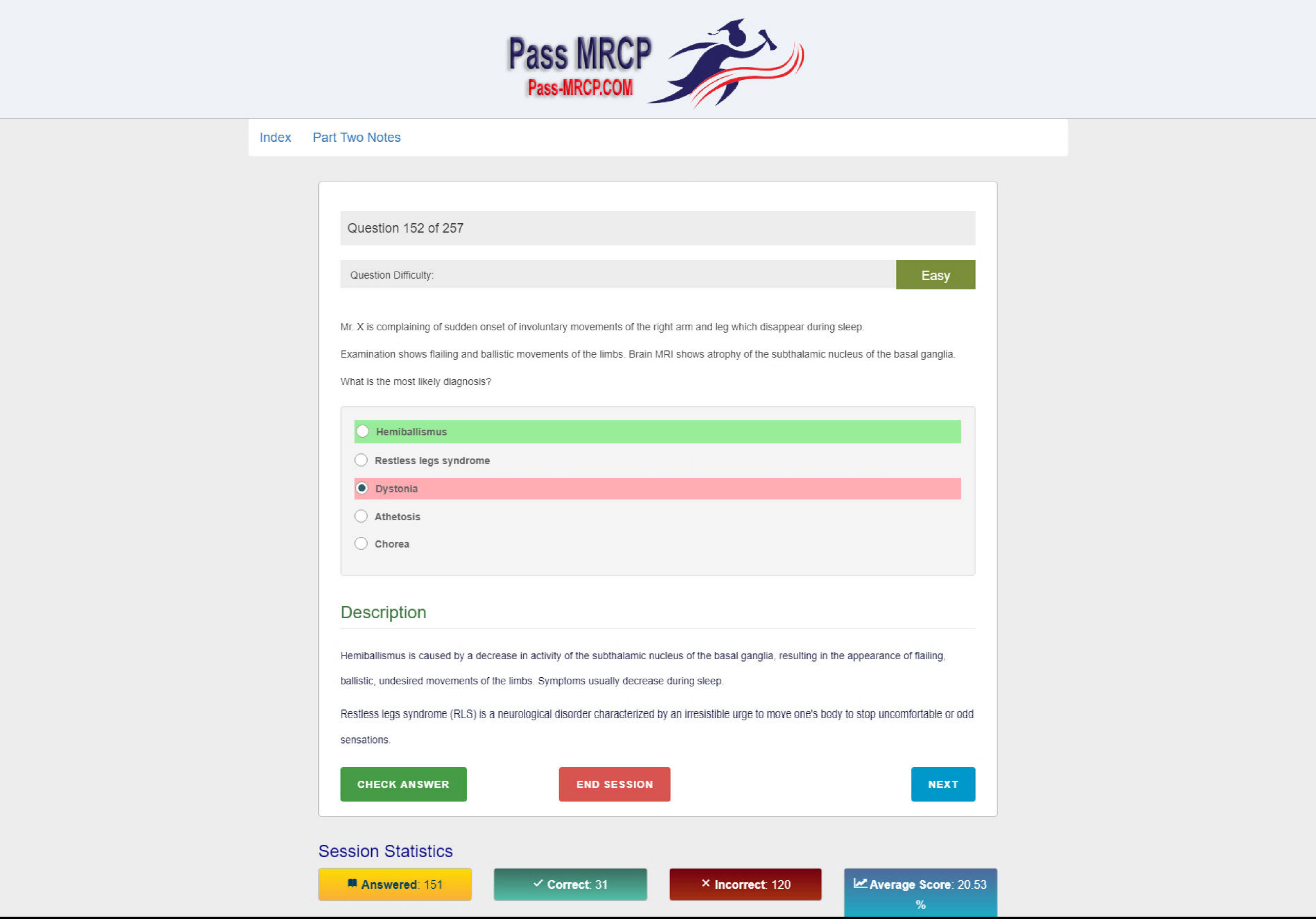
Description

This patient has Wernicke encephalopathy due to thiamine deficiency. It is manifested by classic triad of ataxia, nystagmus and ophthalmoplegia. Other features include:

- Confusion
- Peripheral sensory neuropathy
- Hypotension
- Hypothermia
- Congestive heart failure
- Lactic acidosis

Erythrocyte transketolase level is diagnostic in detecting thiamine deficiency.

Session Statistics



Question 152 of 257

Question Difficulty: **Easy**

Mr. X is complaining of sudden onset of involuntary movements of the right arm and leg which disappear during sleep.

Examination shows flailing and ballistic movements of the limbs. Brain MRI shows atrophy of the subthalamic nucleus of the basal ganglia.

What is the most likely diagnosis?

- ○ **Hemiballismus**
- ○ **Restless legs syndrome**
- ● **Dystonia**
- ○ **Athetosis**
- ○ **Chorea**

Description

Hemiballismus is caused by a decrease in activity of the subthalamic nucleus of the basal ganglia, resulting in the appearance of flailing, ballistic, undesired movements of the limbs. Symptoms usually decrease during sleep.

Restless legs syndrome (RLS) is a neurological disorder characterized by an irresistible urge to move one's body to stop uncomfortable or odd sensations.

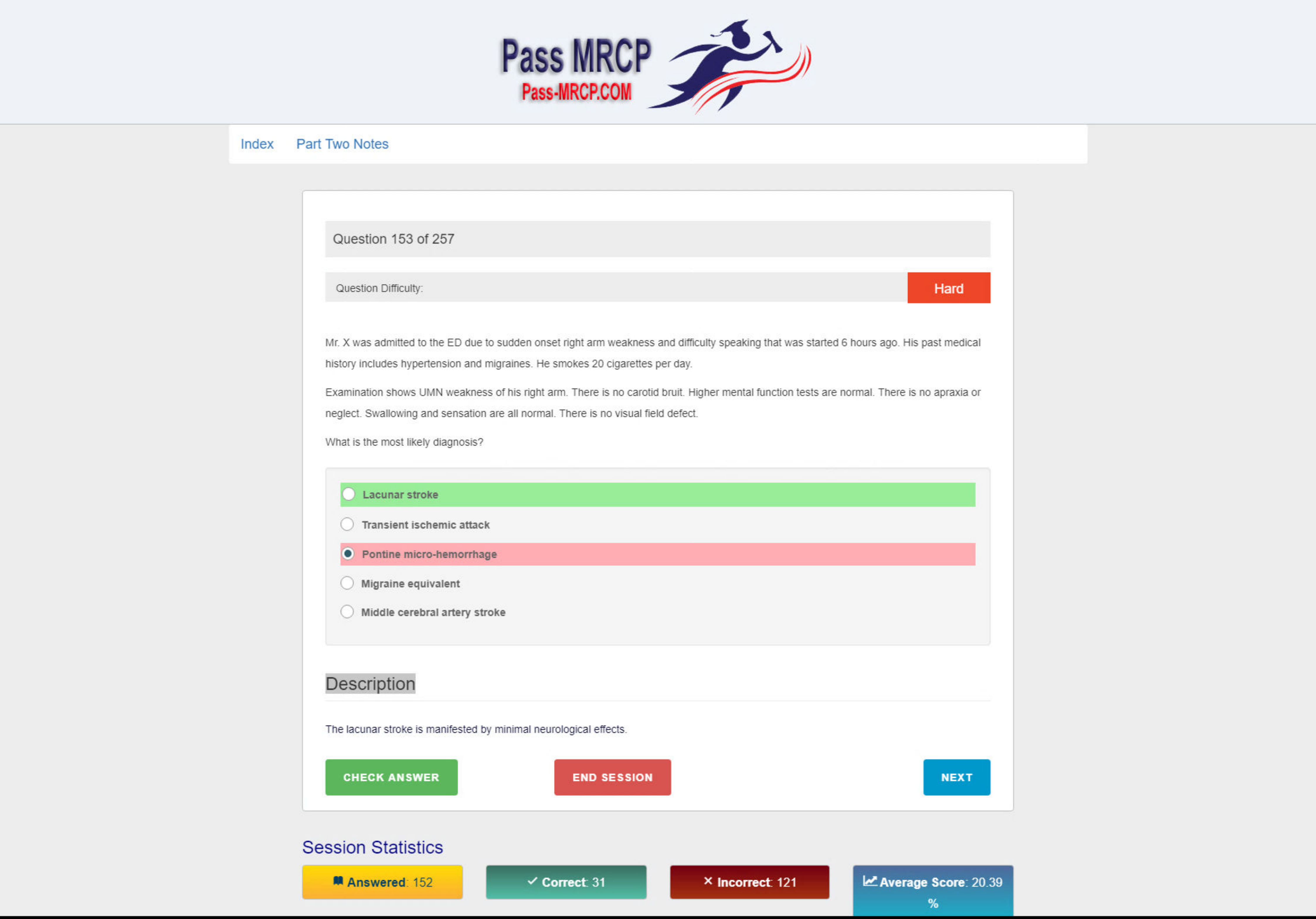
Session Statistics

Answered: 151

✓ **Correct**: 31

× **Incorrect**: 120

Average Score: 20.53 %



Question 153 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to sudden onset right arm weakness and difficulty speaking that was started 6 hours ago. His past medical history includes hypertension and migraines. He smokes 20 cigarettes per day.

Examination shows UMN weakness of his right arm. There is no carotid bruit. Higher mental function tests are normal. There is no apraxia or neglect. Swallowing and sensation are all normal. There is no visual field defect.

What is the most likely diagnosis?

- ○ **Lacunar stroke**
- ○ **Transient ischemic attack**
- ● **Pontine micro-hemorrhage**
- ○ **Migraine equivalent**
- ○ **Middle cerebral artery stroke**

Description

The lacunar stroke is manifested by minimal neurological effects.

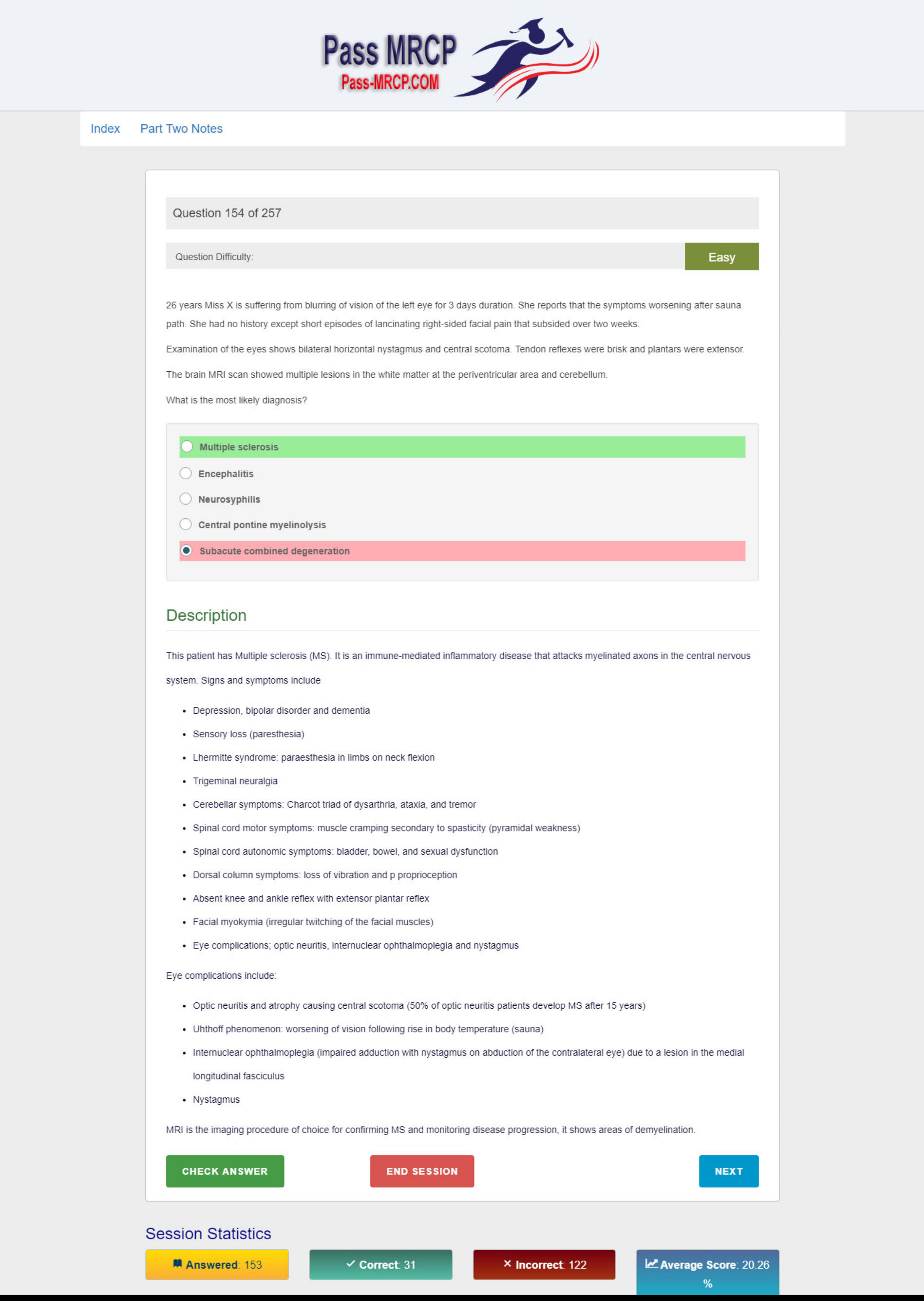
Session Statistics

Answered: 152

✓ **Correct**: 31

× **Incorrect**: 121

Average Score: 20.39 %



Question 154 of 257

Question Difficulty: Easy

26 years Miss X is suffering from blurring of vision of the left eye for 3 days duration. She reports that the symptoms worsening after sauna path. She had no history except short episodes of lancinating right-sided facial pain that subsided over two weeks.

Examination of the eyes shows bilateral horizontal nystagmus and central scotoma. Tendon reflexes were brisk and plantars were extensor.

The brain MRI scan showed multiple lesions in the white matter at the periventricular area and cerebellum.

What is the most likely diagnosis?

○ **Multiple sclerosis**
○ **Encephalitis**
○ **Neurosyphilis**
○ **Central pontine myelinolysis**
● **Subacute combined degeneration**

Description

This patient has Multiple sclerosis (MS). It is an immune-mediated inflammatory disease that attacks myelinated axons in the central nervous system. Signs and symptoms include

- Depression, bipolar disorder and dementia
- Sensory loss (paresthesia)
- Lhermitte syndrome: paraesthesia in limbs on neck flexion
- Trigeminal neuralgia
- Cerebellar symptoms: Charcot triad of dysarthria, ataxia, and tremor
- Spinal cord motor symptoms: muscle cramping secondary to spasticity (pyramidal weakness)
- Spinal cord autonomic symptoms: bladder, bowel, and sexual dysfunction
- Dorsal column symptoms: loss of vibration and p proprioception
- Absent knee and ankle reflex with extensor plantar reflex
- Facial myokymia (irregular twitching of the facial muscles)
- Eye complications; optic neuritis, internuclear ophthalmoplegia and nystagmus

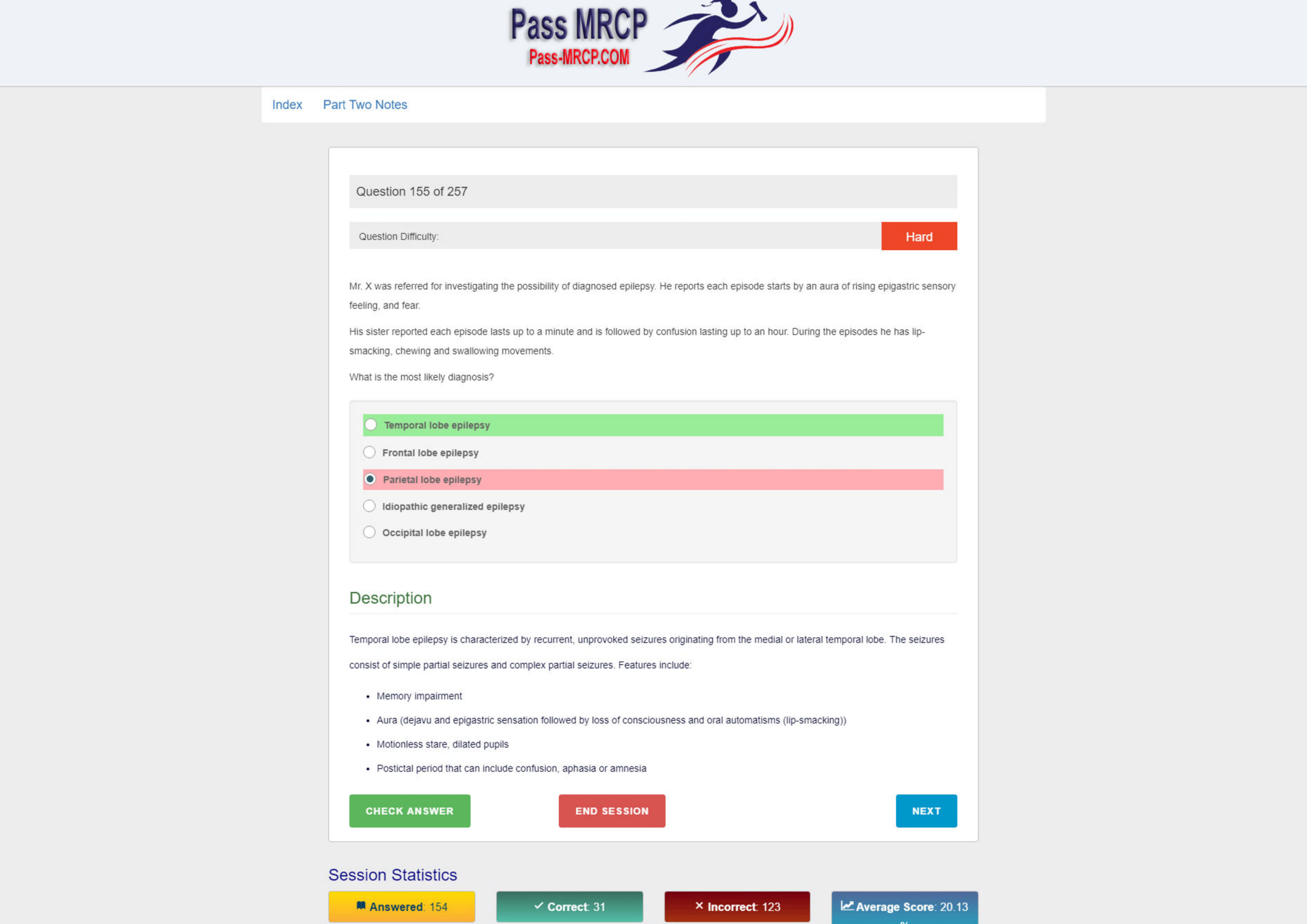
Eye complications include:

- Optic neuritis and atrophy causing central scotoma (50% of optic neuritis patients develop MS after 15 years)
- Uhthoff phenomenon: worsening of vision following rise in body temperature (sauna)
- Internuclear ophthalmoplegia (impaired adduction with nystagmus on abduction of the contralateral eye) due to a lesion in the medial longitudinal fasciculus
- Nystagmus

MRI is the imaging procedure of choice for confirming MS and monitoring disease progression, it shows areas of demyelination.

Session Statistics

Answered: 153
✓ **Correct**: 31
✕ **Incorrect**: 122
Average Score: 20.26 %



Question 155 of 257

Question Difficulty: Hard

Mr. X was referred for investigating the possibility of diagnosed epilepsy. He reports each episode starts by an aura of rising epigastric sensory feeling, and fear.

His sister reported each episode lasts up to a minute and is followed by confusion lasting up to an hour. During the episodes he has lip-smacking, chewing and swallowing movements.

What is the most likely diagnosis?

○ **Temporal lobe epilepsy**
○ **Frontal lobe epilepsy**
● **Parietal lobe epilepsy**
○ **Idiopathic generalized epilepsy**
○ **Occipital lobe epilepsy**

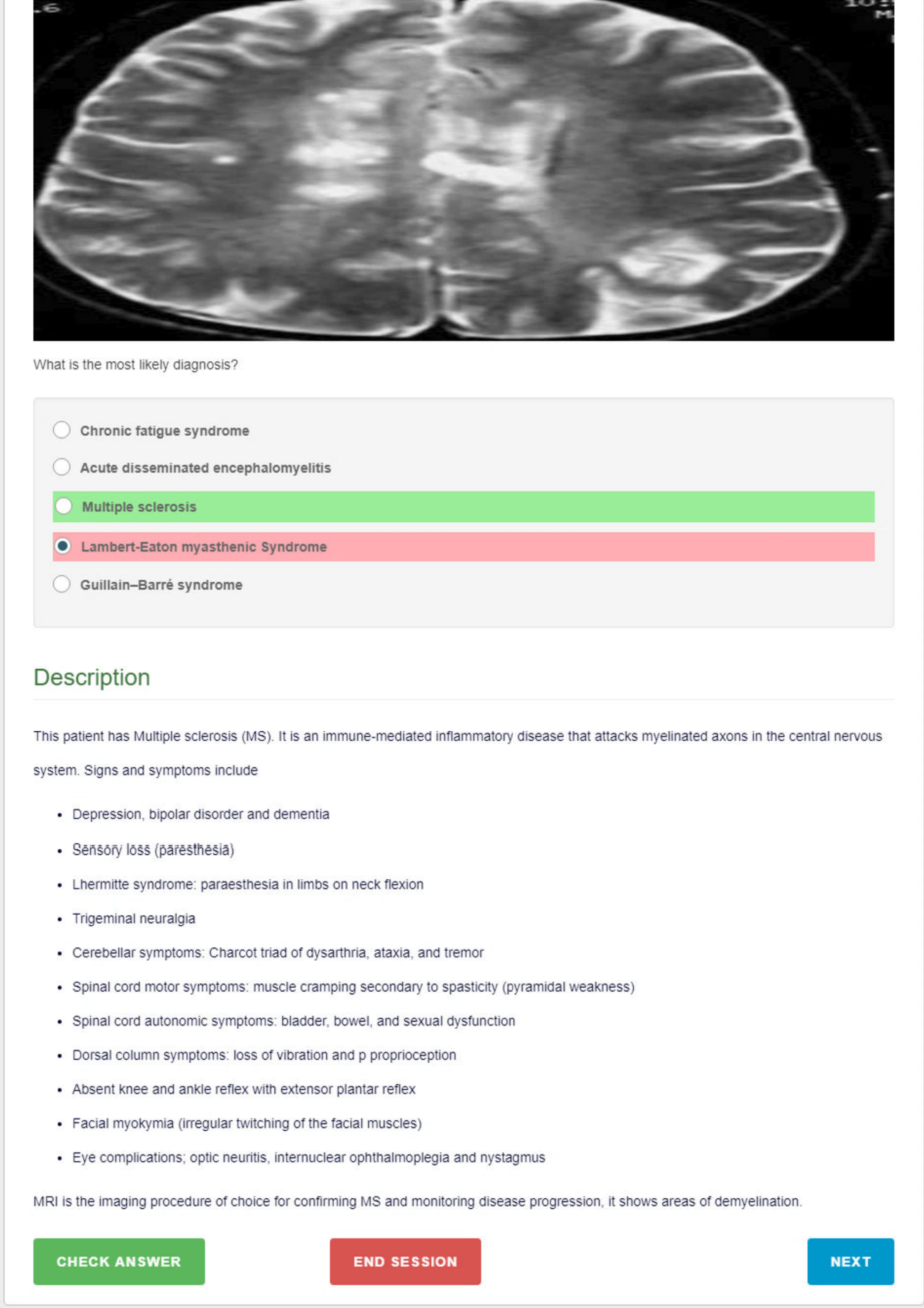
Description

Temporal lobe epilepsy is characterized by recurrent, unprovoked seizures originating from the medial or lateral temporal lobe. The seizures consist of simple partial seizures and complex partial seizures. Features include:

- Memory impairment
- Aura (dejavu and epigastric sensation followed by loss of consciousness and oral automatisms (lip-smacking))
- Motionless stare, dilated pupils
- Postictal period that can include confusion, aphasia or amnesia

Session Statistics

Answered: 154
✓ **Correct**: 31
✕ **Incorrect**: 123
Average Score: 20.13



What is the most likely diagnosis?

- ○ **Chronic fatigue syndrome**
- ○ **Acute disseminated encephalomyelitis**
- ○ **Multiple sclerosis**
- ● **Lambert-Eaton myasthenic Syndrome**
- ○ **Guillain–Barré syndrome**

Description

This patient has Multiple sclerosis (MS). It is an immune-mediated inflammatory disease that attacks myelinated axons in the central nervous system. Signs and symptoms include

- Depression, bipolar disorder and dementia
- Sensory loss (paresthesia)
- Lhermitte syndrome: paraesthesia in limbs on neck flexion
- Trigeminal neuralgia
- Cerebellar symptoms: Charcot triad of dysarthria, ataxia, and tremor
- Spinal cord motor symptoms: muscle cramping secondary to spasticity (pyramidal weakness)
- Spinal cord autonomic symptoms: bladder, bowel, and sexual dysfunction
- Dorsal column symptoms: loss of vibration and p proprioception
- Absent knee and ankle reflex with extensor plantar reflex
- Facial myokymia (irregular twitching of the facial muscles)
- Eye complications; optic neuritis, internuclear ophthalmoplegia and nystagmus

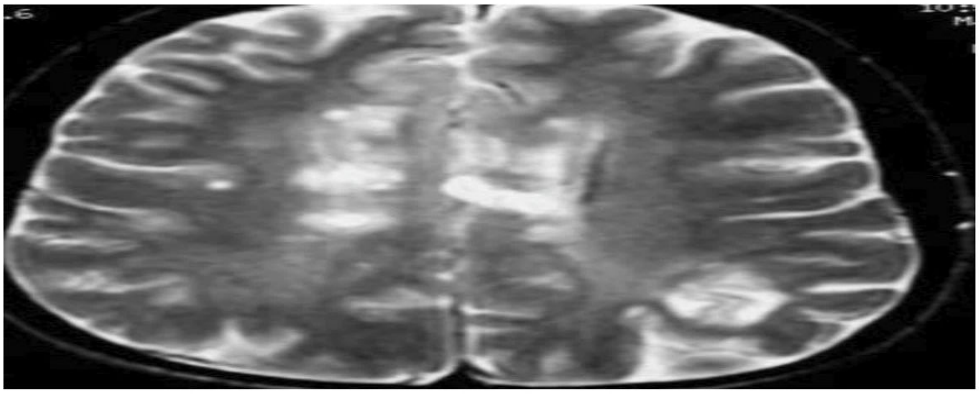
MRI is the imaging procedure of choice for confirming MS and monitoring disease progression, it shows areas of demyelination.

Question 156 of 257

Question Difficulty: **Easy**

30 years Miss X is complaining of 3 week of blurred vision, unsteady gait and numbness in the right hand. She has experienced similar short lived attacks in the past year ago which resolved spontaneously after 8 days.

Examination of the eyes shows bilateral horizontal nystagmus and central scotoma. The lower limbs show pyramidal weakness with loss of vibration and proprioception. There is absent knee and ankle reflex with extensor plantar reflex. Brain MRI is shown in the image.



What is the most likely diagnosis?

○ **Chronic fatigue syndrome**
○ **Acute disseminated encephalomyelitis**
○ **Multiple sclerosis**
● **Lambert-Eaton myasthenic Syndrome**
○ **Guillain–Barré syndrome**

Description

This patient has Multiple sclerosis (MS). It is an immune-mediated inflammatory disease that attacks myelinated axons in the central nervous system. Signs and symptoms include

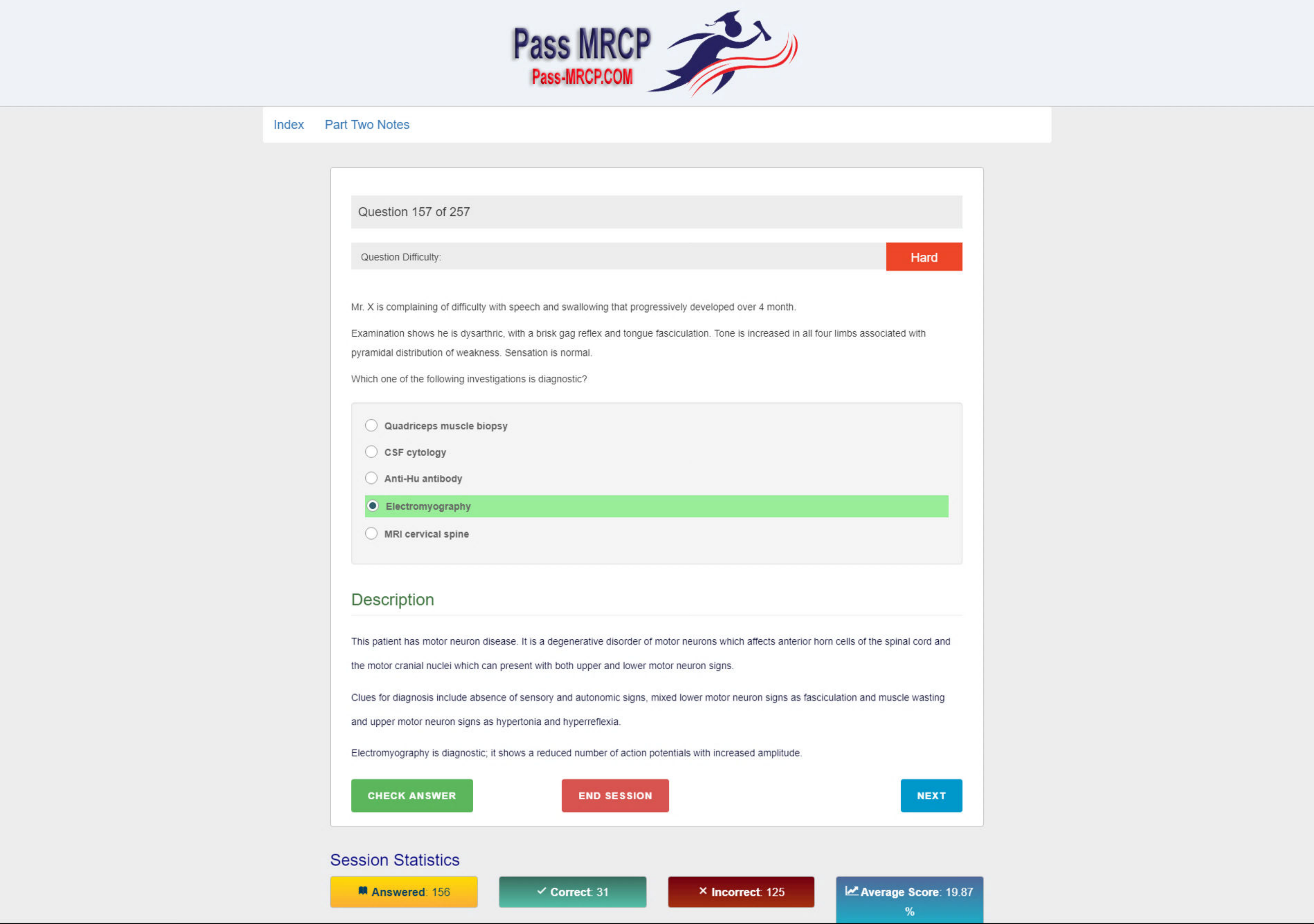
- Depression, bipolar disorder and dementia
- Sensory loss (paresthesia)
- Lhermitte syndrome: paraesthesia in limbs on neck flexion
- Trigeminal neuralgia
- Cerebellar symptoms: Charcot triad of dysarthria, ataxia, and tremor
- Spinal cord motor symptoms: muscle cramping secondary to spasticity (pyramidal weakness)
- Spinal cord autonomic symptoms: bladder, bowel, and sexual dysfunction
- Dorsal column symptoms: loss of vibration and p proprioception
- Absent knee and ankle reflex with extensor plantar reflex
- Facial myokymia (irregular twitching of the facial muscles)
- Eye complications; optic neuritis, internuclear ophthalmoplegia and nystagmus

MRI is the imaging procedure of choice for confirming MS and monitoring disease progression, it shows areas of demyelination.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 155 ✓ **Correct**: 31 ✕ **Incorrect**: 124 **Average Score**: 20 %



Question 157 of 257

Question Difficulty: Hard

Mr. X is complaining of difficulty with speech and swallowing that progressively developed over 4 month.

Examination shows he is dysarthric, with a brisk gag reflex and tongue fasciculation. Tone is increased in all four limbs associated with pyramidal distribution of weakness. Sensation is normal.

Which one of the following investigations is diagnostic?

○ **Quadriceps muscle biopsy**
○ **CSF cytology**
○ **Anti-Hu antibody**
● **Electromyography**
○ **MRI cervical spine**

Description

This patient has motor neuron disease. It is a degenerative disorder of motor neurons which affects anterior horn cells of the spinal cord and the motor cranial nuclei which can present with both upper and lower motor neuron signs.

Clues for diagnosis include absence of sensory and autonomic signs, mixed lower motor neuron signs as fasciculation and muscle wasting and upper motor neuron signs as hypertonia and hyperreflexia.

Electromyography is diagnostic; it shows a reduced number of action potentials with increased amplitude.

Session Statistics

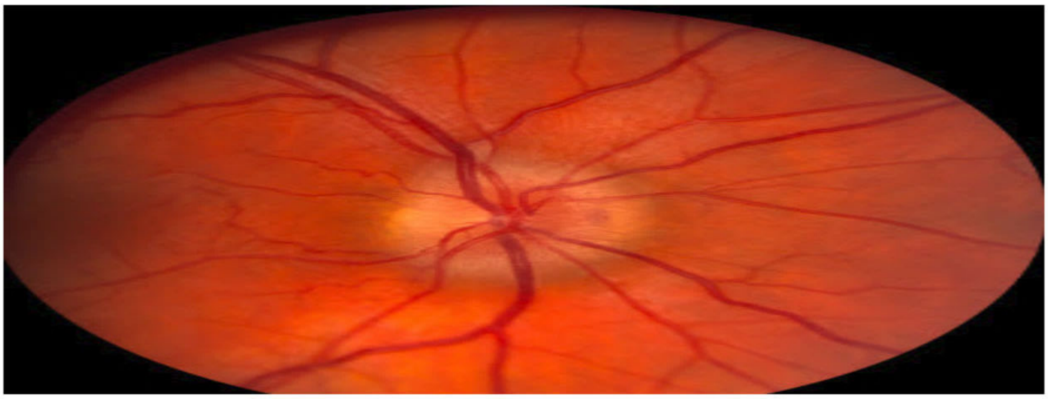
Answered: 156
✓ **Correct**: 31
✕ **Incorrect**: 125
Average Score: 19.87 %

Question 158 of 257

Question Difficulty: **Average**

Mr. X was complaining of severe headache that was persistent for the past 3 months. He describes the headache as worse in the morning and worse by coughing and sneezing and associated with pulsatile tinnitus.

Examination shows enlargement of the blind spot with some diplopia on left lateral gaze. His body mass index is 32. CSF shows high opening pressure with normal other constituents. Fundoscopic examination is shown in the image.



What is the most likely diagnosis?

○ **Microprolactinoma**
○ **Sagittal sinus thrombosis**
○ **Normal pressure hydrocephalus**
● **Idiopathic intracranial hypertension**
○ **Macroprolactinoma**

Description

Idiopathic intracranial hypertension (pseudo-tumor cerebri) is a neurological disorder that is characterized by increased intracranial pressure in the absence of a tumor or other diseases. Signs and symptoms include:

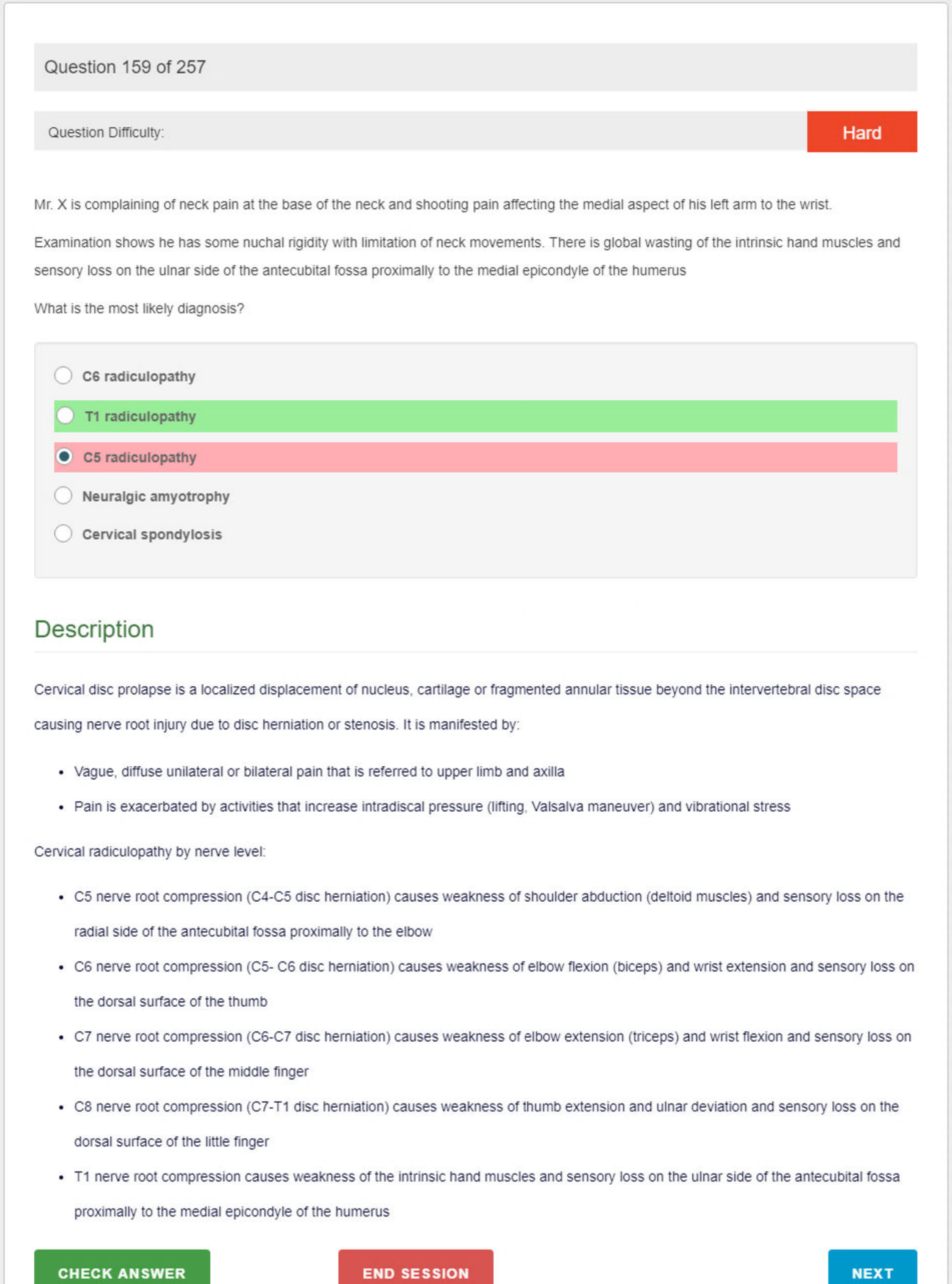
- Headache is the initial and most common symptom, features include
  - Worse in the morning
  - Throbbing in nature
  - Worse by coughing and sneezing
- Pulsatile tinnitus
- Diplopia with blurring and distortion of central vision (enlarged blind spot)
- VI cranial nerve palsy

Fundoscopic examination shows papilledema.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 157 ✓ **Correct**: 32 ✕ **Incorrect**: 125 **Average Score**: 20.38 %



Question 159 of 257

Mr. X is complaining of neck pain at the base of the neck and shooting pain affecting the medial aspect of his left arm to the wrist.

Examination shows he has some nuchal rigidity with limitation of neck movements. There is global wasting of the intrinsic hand muscles and sensory loss on the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus

What is the most likely diagnosis?

○ **C6 radiculopathy**

○ **T1 radiculopathy**

● **C5 radiculopathy**

○ **Neuralgic amyotrophy**

○ **Cervical spondylosis**

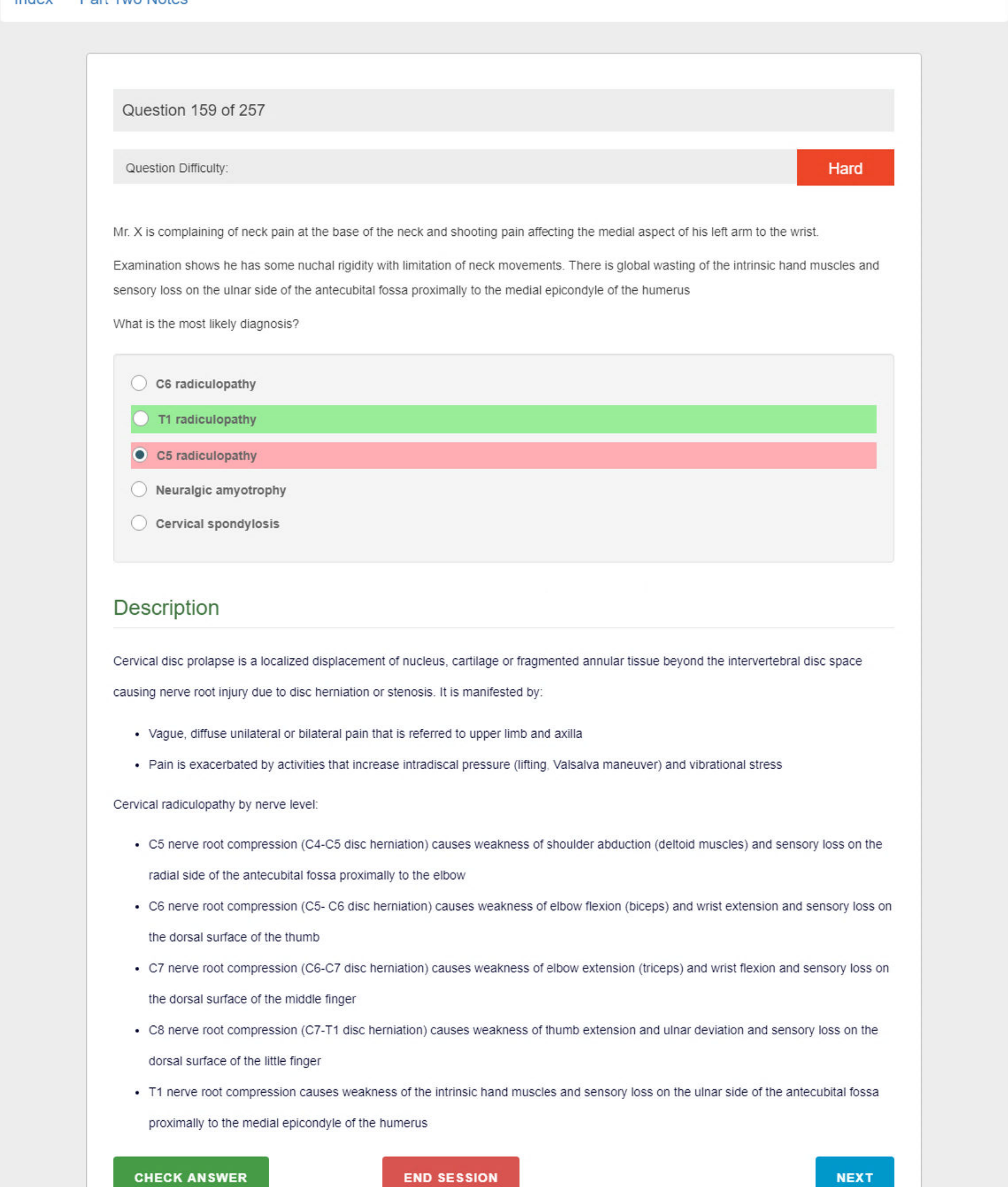
Description

Cervical disc prolapse is a localized displacement of nucleus, cartilage or fragmented annular tissue beyond the intervertebral disc space causing nerve root injury due to disc herniation or stenosis. It is manifested by:

- Vague, diffuse unilateral or bilateral pain that is referred to upper limb and axilla
- Pain is exacerbated by activities that increase intradiscal pressure (lifting, Valsalva maneuver) and vibrational stress

Cervical radiculopathy by nerve level:

- C5 nerve root compression (C4-C5 disc herniation) causes weakness of shoulder abduction (deltoid muscles) and sensory loss on the radial side of the antecubital fossa proximally to the elbow
- C6 nerve root compression (C5- C6 disc herniation) causes weakness of elbow flexion (biceps) and wrist extension and sensory loss on the dorsal surface of the thumb
- C7 nerve root compression (C6-C7 disc herniation) causes weakness of elbow extension (triceps) and wrist flexion and sensory loss on the dorsal surface of the middle finger
- C8 nerve root compression (C7-T1 disc herniation) causes weakness of thumb extension and ulnar deviation and sensory loss on the dorsal surface of the little finger
- T1 nerve root compression causes weakness of the intrinsic hand muscles and sensory loss on the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus



Question 159 of 257

Question Difficulty: Hard

Mr. X is complaining of neck pain at the base of the neck and shooting pain affecting the medial aspect of his left arm to the wrist.

Examination shows he has some nuchal rigidity with limitation of neck movements. There is global wasting of the intrinsic hand muscles and sensory loss on the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus

What is the most likely diagnosis?

○ **C6 radiculopathy**
○ **T1 radiculopathy**
● **C5 radiculopathy**
○ **Neuralgic amyotrophy**
○ **Cervical spondylosis**

Description

Cervical disc prolapse is a localized displacement of nucleus, cartilage or fragmented annular tissue beyond the intervertebral disc space causing nerve root injury due to disc herniation or stenosis. It is manifested by:

- Vague, diffuse unilateral or bilateral pain that is referred to upper limb and axilla
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Cervical radiculopathy by nerve level:

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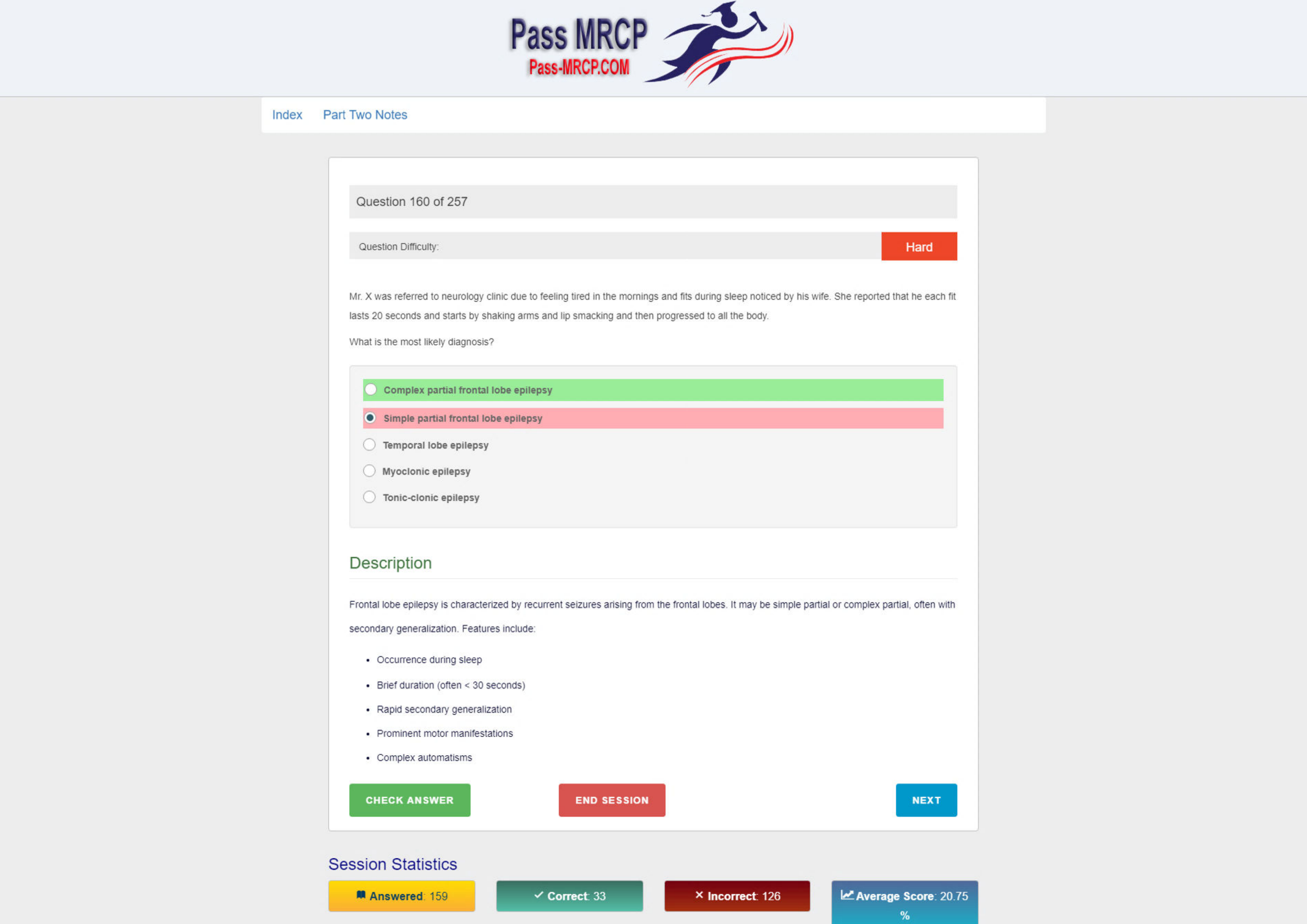
- C7 nerve root compression (C6-C7 disc herniation) causes weakness of elbow extension (triceps) and wrist flexion and sensory loss on the dorsal surface of the middle finger
- C8 nerve root compression (C7-T1 disc herniation) causes weakness of thumb extension and ulnar deviation and sensory loss on the dorsal surface of the little finger
- T1 nerve root compression causes weakness of the intrinsic hand muscles and sensory loss on the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus



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Index   Part Two Notes

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Question Difficulty: **Hard**

Mr. X was referred to neurology clinic due to feeling tired in the mornings and fits during sleep noticed by his wife. She reported that he each fit lasts 20 seconds and starts by shaking arms and lip smacking and then progressed to all the body.

What is the most likely diagnosis?

○ **Complex partial frontal lobe epilepsy**
● **Simple partial frontal lobe epilepsy**
○ **Temporal lobe epilepsy**
○ **Myoclonic epilepsy**
○ **Tonic-clonic epilepsy**

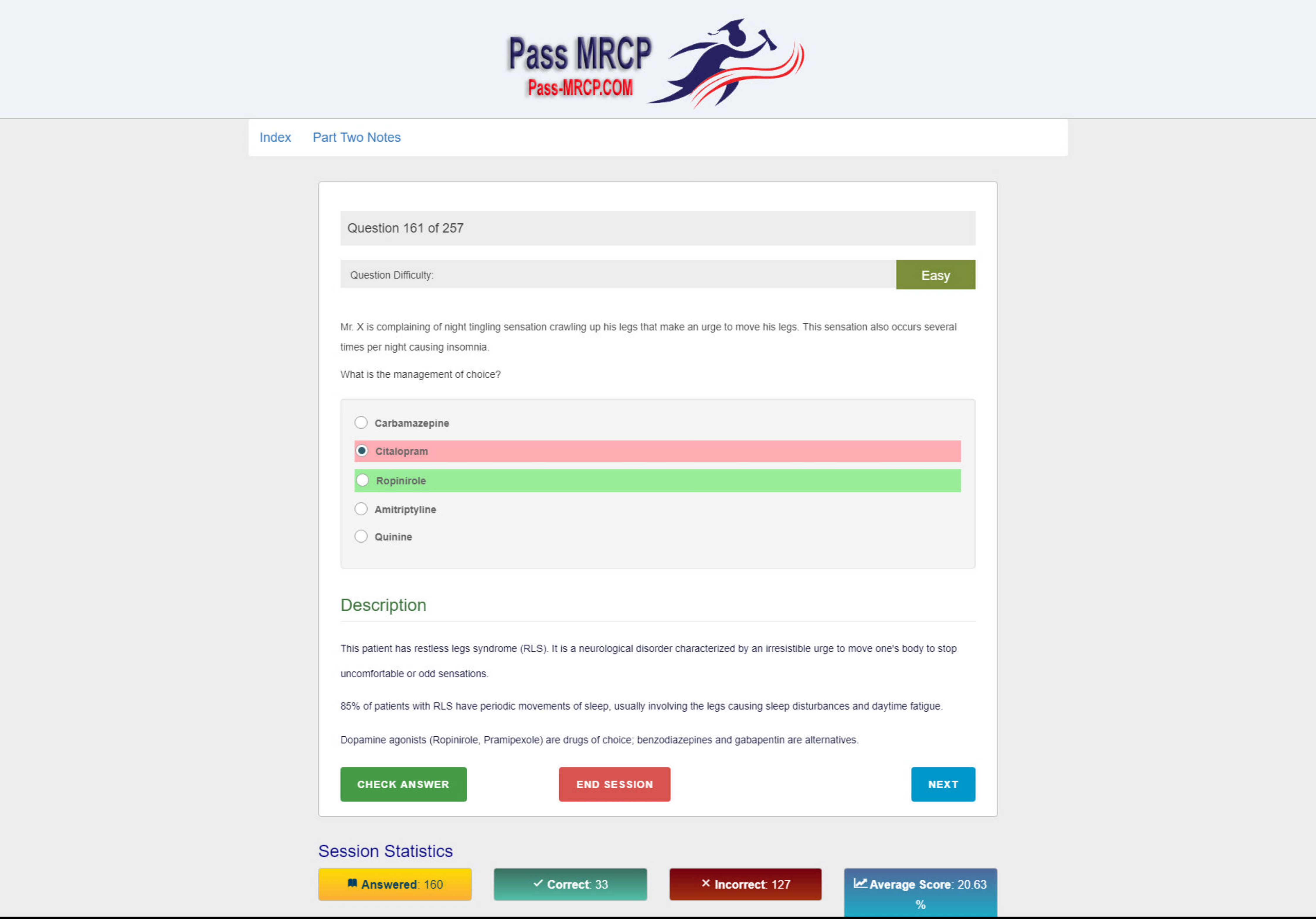
Description

Frontal lobe epilepsy is characterized by recurrent seizures arising from the frontal lobes. It may be simple partial or complex partial, often with secondary generalization. Features include:

- Occurrence during sleep
- Brief duration (often < 30 seconds)
- Rapid secondary generalization
- Prominent motor manifestations
- Complex automatisms

Session Statistics

Answered: 159
✓ **Correct**: 33
✕ **Incorrect**: 126
Average Score: 20.75 %



Question 161 of 257

Question Difficulty: Easy

Mr. X is complaining of night tingling sensation crawling up his legs that make an urge to move his legs. This sensation also occurs several times per night causing insomnia.

What is the management of choice?

- ○ Carbamazepine
- ● Citalopram
- ○ Ropinirole
- ○ Amitriptyline
- ○ Quinine

Description

This patient has restless legs syndrome (RLS). It is a neurological disorder characterized by an irresistible urge to move one's body to stop uncomfortable or odd sensations.

85% of patients with RLS have periodic movements of sleep, usually involving the legs causing sleep disturbances and daytime fatigue.

Dopamine agonists (Ropinirole, Pramipexole) are drugs of choice; benzodiazepines and gabapentin are alternatives.

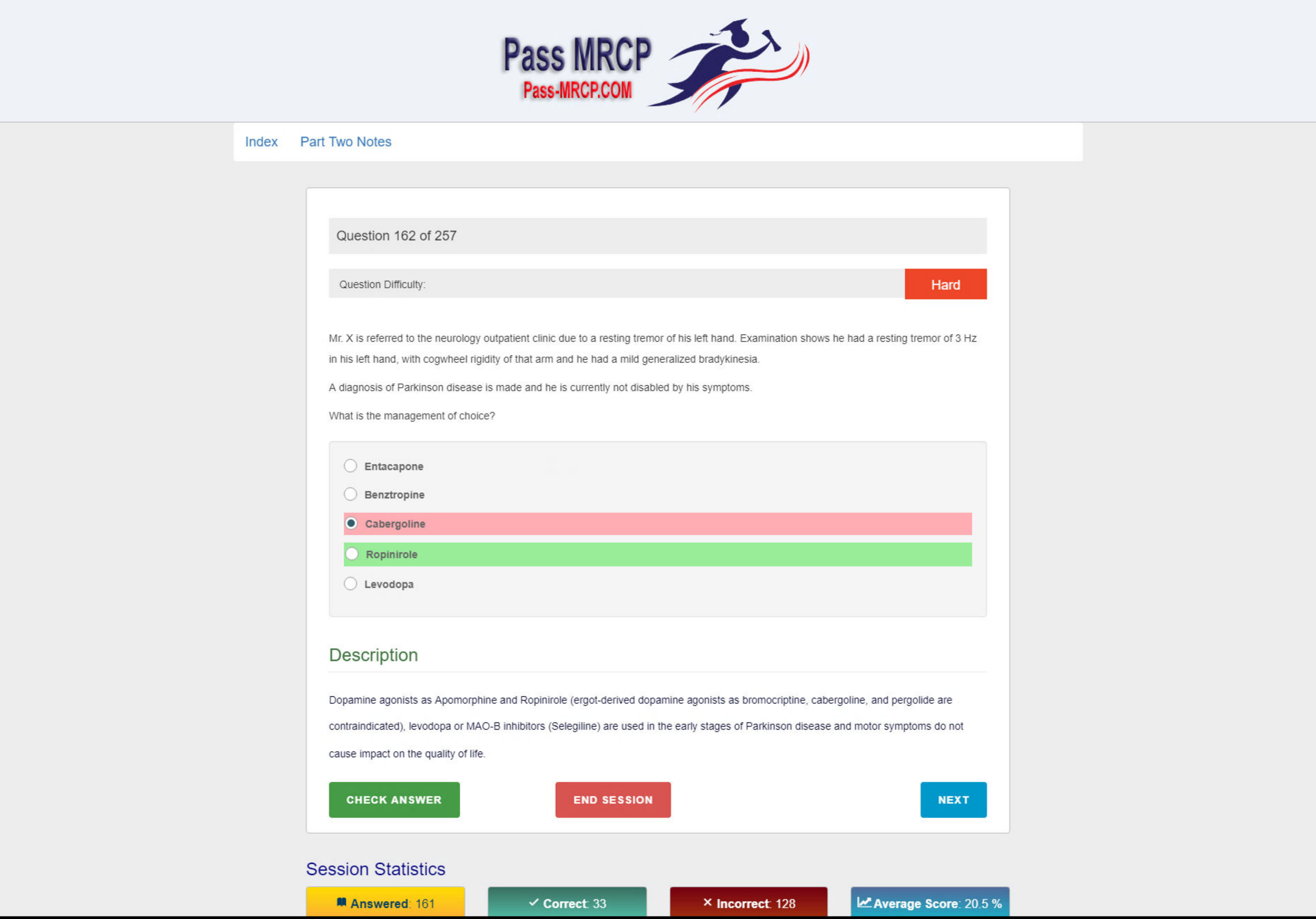
Session Statistics

Answered: 160

✓ Correct: 33

✕ Incorrect: 127

Average Score: 20.63 %



Question 162 of 257

Question Difficulty: **Hard**

Mr. X is referred to the neurology outpatient clinic due to a resting tremor of his left hand. Examination shows he had a resting tremor of 3 Hz in his left hand, with cogwheel rigidity of that arm and he had a mild generalized bradykinesia.

A diagnosis of Parkinson disease is made and he is currently not disabled by his symptoms.

What is the management of choice?

- ○ **Entacapone**
- ○ **Benztropine**
- ● **Cabergoline**
- ○ **Ropinirole**
- ○ **Levodopa**

Description

Dopamine agonists as Apomorphine and Ropinirole (ergot-derived dopamine agonists as bromocriptine, cabergoline, and pergolide are contraindicated), levodopa or MAO-B inhibitors (Selegiline) are used in the early stages of Parkinson disease and motor symptoms do not cause impact on the quality of life.

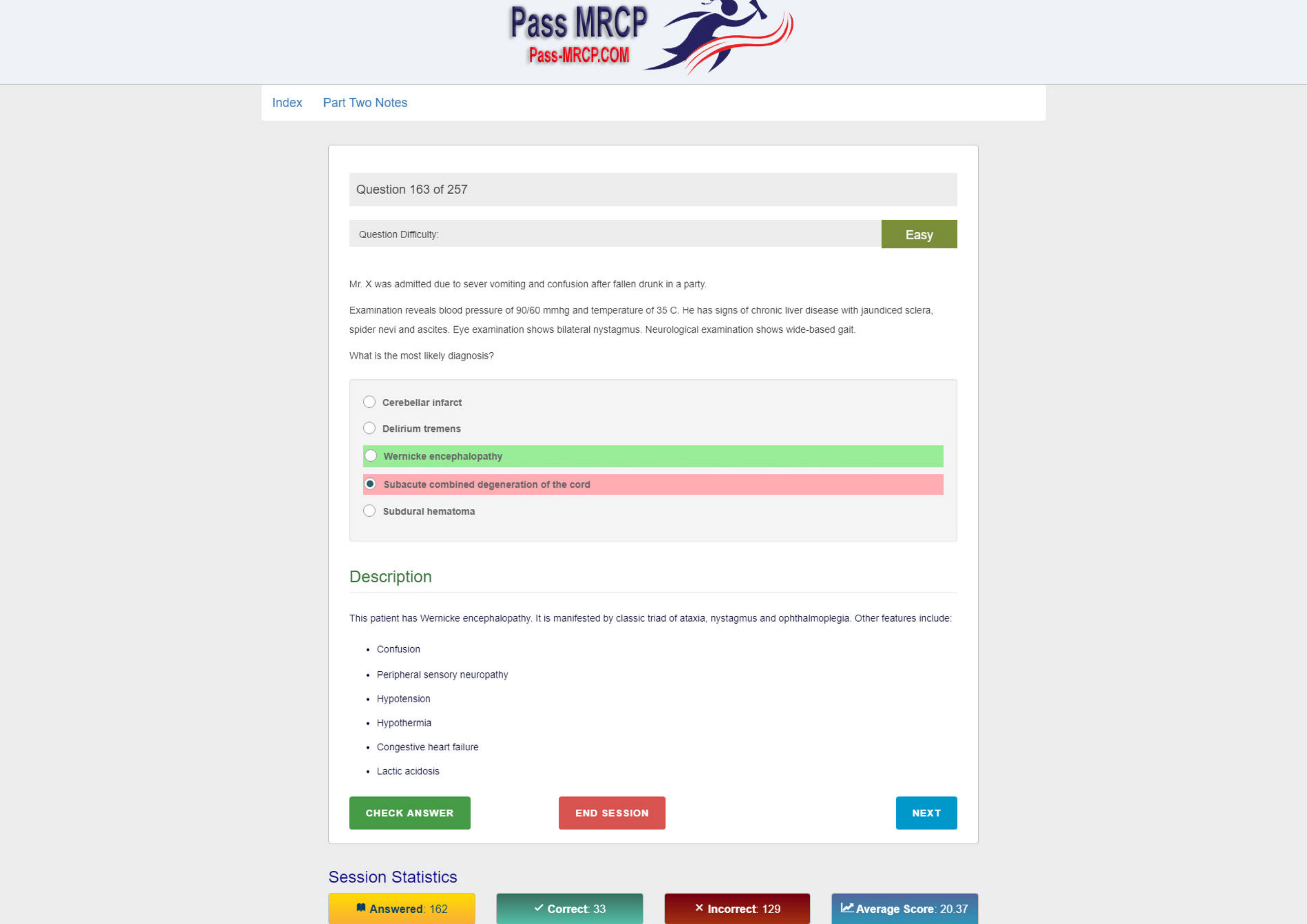
Session Statistics

Answered: 161

✓ **Correct**: 33

✕ **Incorrect**: 128

Average Score: 20.5 %



Question 163 of 257

Question Difficulty: Easy

Mr. X was admitted due to sever vomiting and confusion after fallen drunk in a party.

Examination reveals blood pressure of 90/60 mmhg and temperature of 35 C. He has signs of chronic liver disease with jaundiced sclera, spider nevi and ascites. Eye examination shows bilateral nystagmus. Neurological examination shows wide-based gait.

What is the most likely diagnosis?

○ **Cerebellar infarct**
○ **Delirium tremens**
○ **Wernicke encephalopathy**
● **Subacute combined degeneration of the cord**
○ **Subdural hematoma**

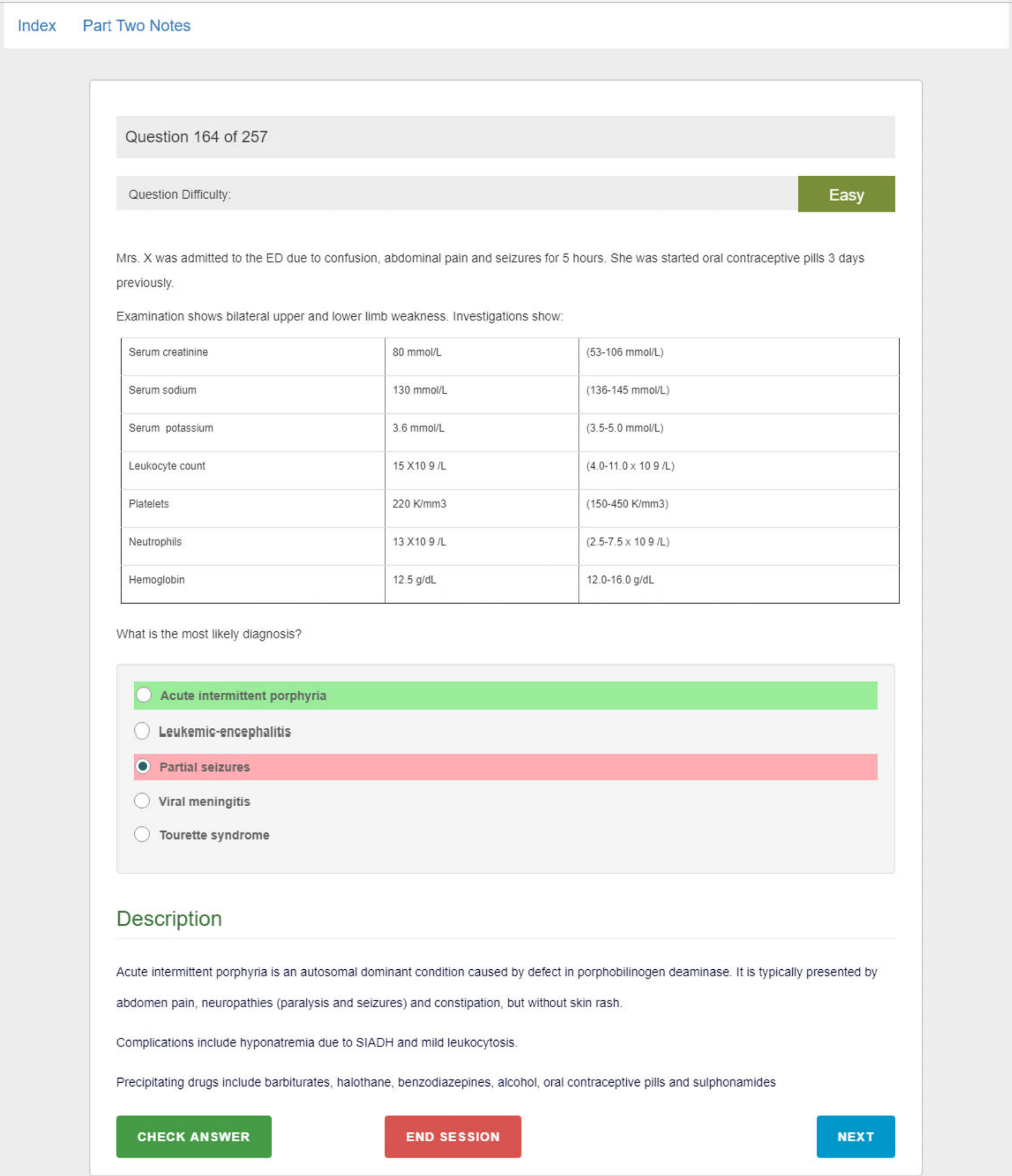
Description

This patient has Wernicke encephalopathy. It is manifested by classic triad of ataxia, nystagmus and ophthalmoplegia. Other features include:

- Confusion
- Peripheral sensory neuropathy
- Hypotension
- Hypothermia
- Congestive heart failure
- Lactic acidosis

Session Statistics

Answered: 162
✓ **Correct**: 33
✕ **Incorrect**: 129
Average Score: 20.37



Question 164 of 257

Question Difficulty: Easy

Mrs. X was admitted to the ED due to confusion, abdominal pain and seizures for 5 hours. She was started oral contraceptive pills 3 days previously.

Examination shows bilateral upper and lower limb weakness. Investigations show:

Serum creatinine	80 mmol/L	(53-106 mmol/L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	3.6 mmol/L	(3.5-5.0 mmol/L)
Leukocyte count	15 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	220 K/mm3	(150-450 K/mm3)
Neutrophils	13 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	12.5 g/dL	12.0-16.0 g/dL

What is the most likely diagnosis?

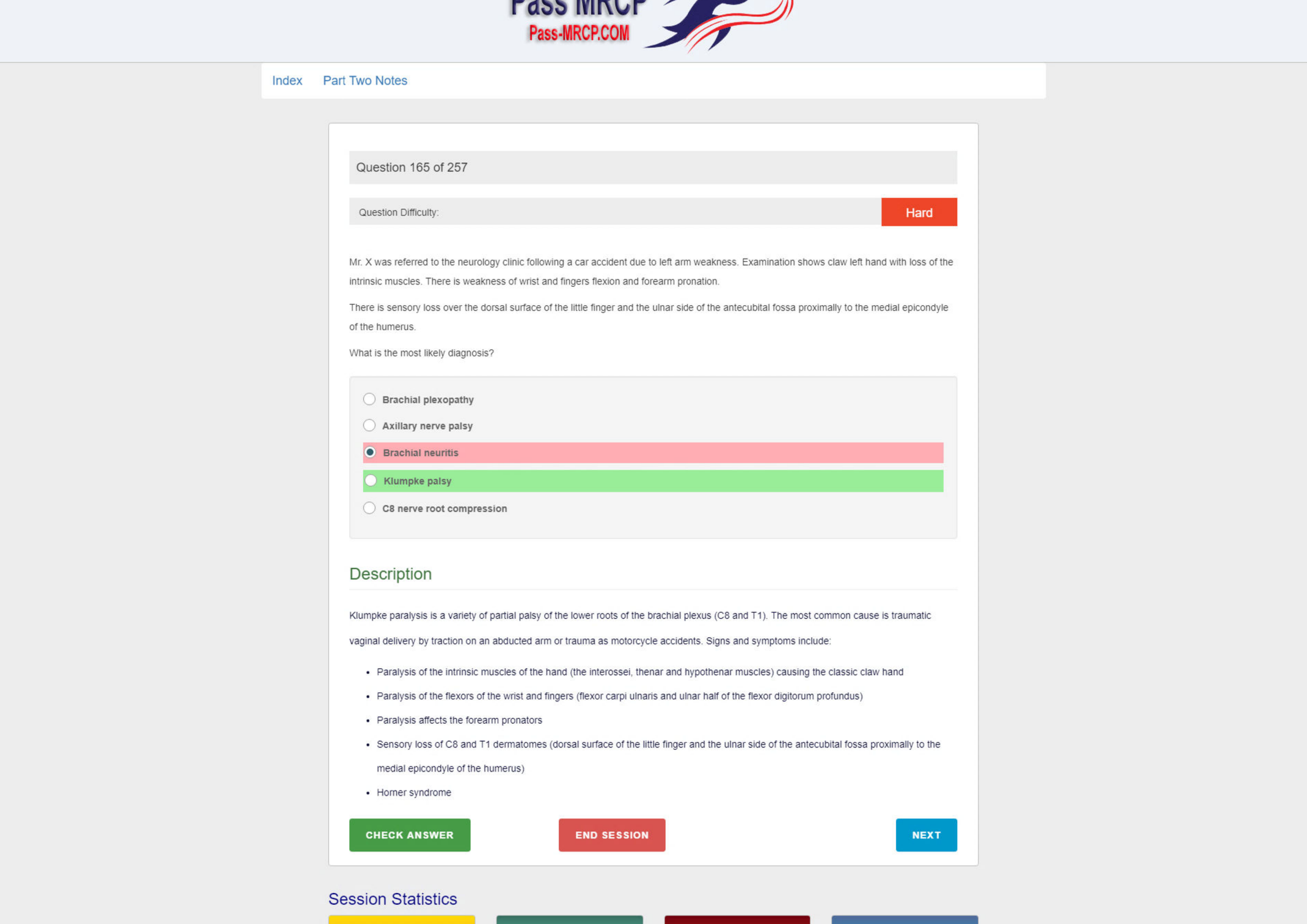
- ○ **Acute intermittent porphyria**
- ○ **Leukemic-encephalitis**
- ● **Partial seizures**
- ○ **Viral meningitis**
- ○ **Tourette syndrome**

Description

Acute intermittent porphyria is an autosomal dominant condition caused by defect in porphobilinogen deaminase. It is typically presented by abdomen pain, neuropathies (paralysis and seizures) and constipation, but without skin rash.

Complications include hyponatremia due to SIADH and mild leukocytosis.

Precipitating drugs include barbiturates, halothane, benzodiazepines, alcohol, oral contraceptive pills and sulphonamides



Question 165 of 257

Question Difficulty: **Hard**

Mr. X was referred to the neurology clinic following a car accident due to left arm weakness. Examination shows claw left hand with loss of the intrinsic muscles. There is weakness of wrist and fingers flexion and forearm pronation.

There is sensory loss over the dorsal surface of the little finger and the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus.

What is the most likely diagnosis?

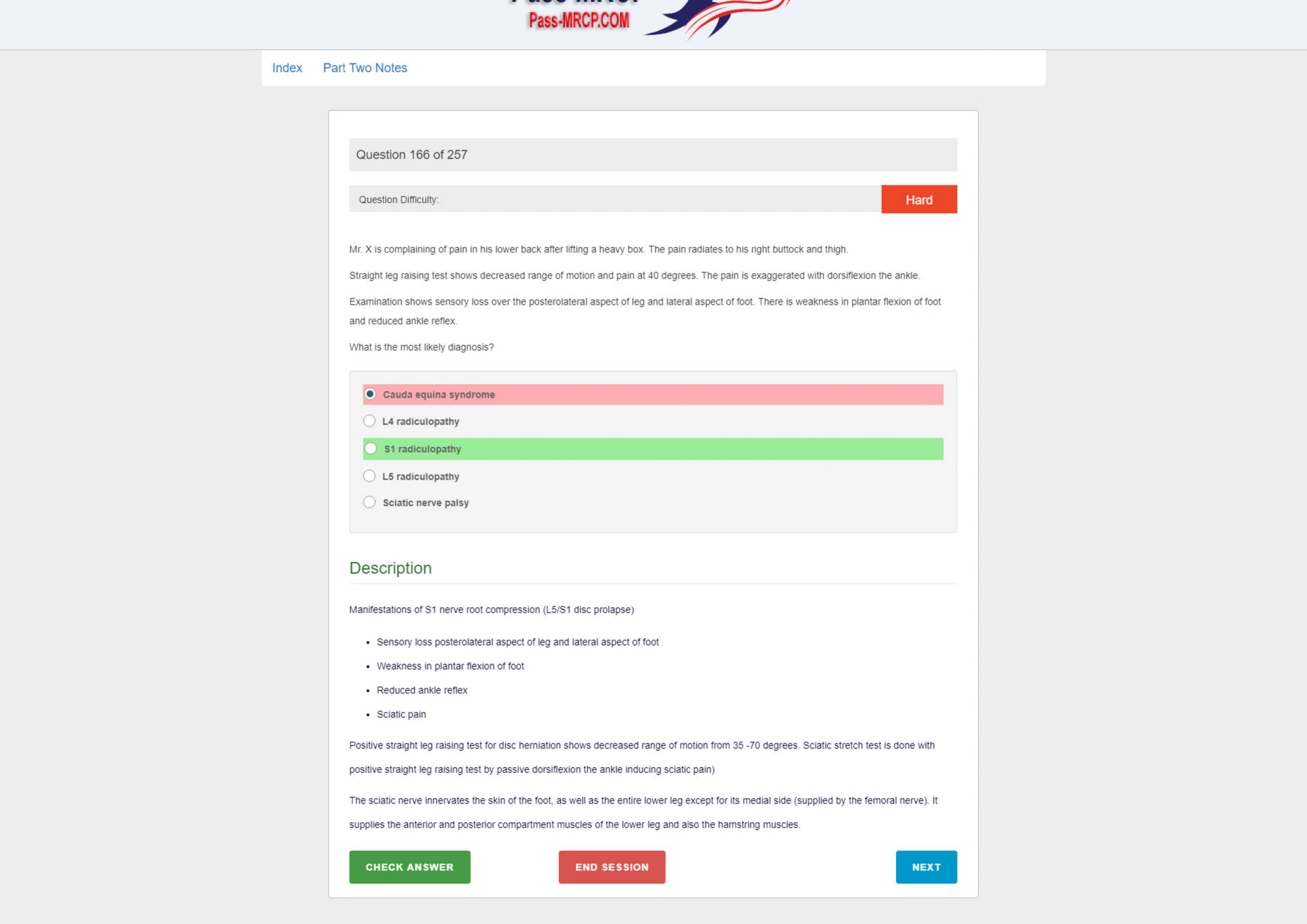
○ **Brachial plexopathy**
○ **Axillary nerve palsy**
● **Brachial neuritis**
○ **Klumpke palsy**
○ **C8 nerve root compression**

Description

Klumpke paralysis is a variety of partial palsy of the lower roots of the brachial plexus (C8 and T1). The most common cause is traumatic vaginal delivery by traction on an abducted arm or trauma as motorcycle accidents. Signs and symptoms include:

- Paralysis of the intrinsic muscles of the hand (the interossei, thenar and hypothenar muscles) causing the classic claw hand
- Paralysis of the flexors of the wrist and fingers (flexor carpi ulnaris and ulnar half of the flexor digitorum profundus)
- Paralysis affects the forearm pronators
- Sensory loss of C8 and T1 dermatomes (dorsal surface of the little finger and the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus)
- Horner syndrome

Session Statistics



Question 166 of 257

Question Difficulty: **Hard**

Mr. X is complaining of pain in his lower back after lifting a heavy box. The pain radiates to his right buttock and thigh.

Straight leg raising test shows decreased range of motion and pain at 40 degrees. The pain is exaggerated with dorsiflexion the ankle.

Examination shows sensory loss over the posterolateral aspect of leg and lateral aspect of foot. There is weakness in plantar flexion of foot and reduced ankle reflex.

What is the most likely diagnosis?

● **Cauda equina syndrome**
○ **L4 radiculopathy**
○ **S1 radiculopathy**
○ **L5 radiculopathy**
○ **Sciatic nerve palsy**

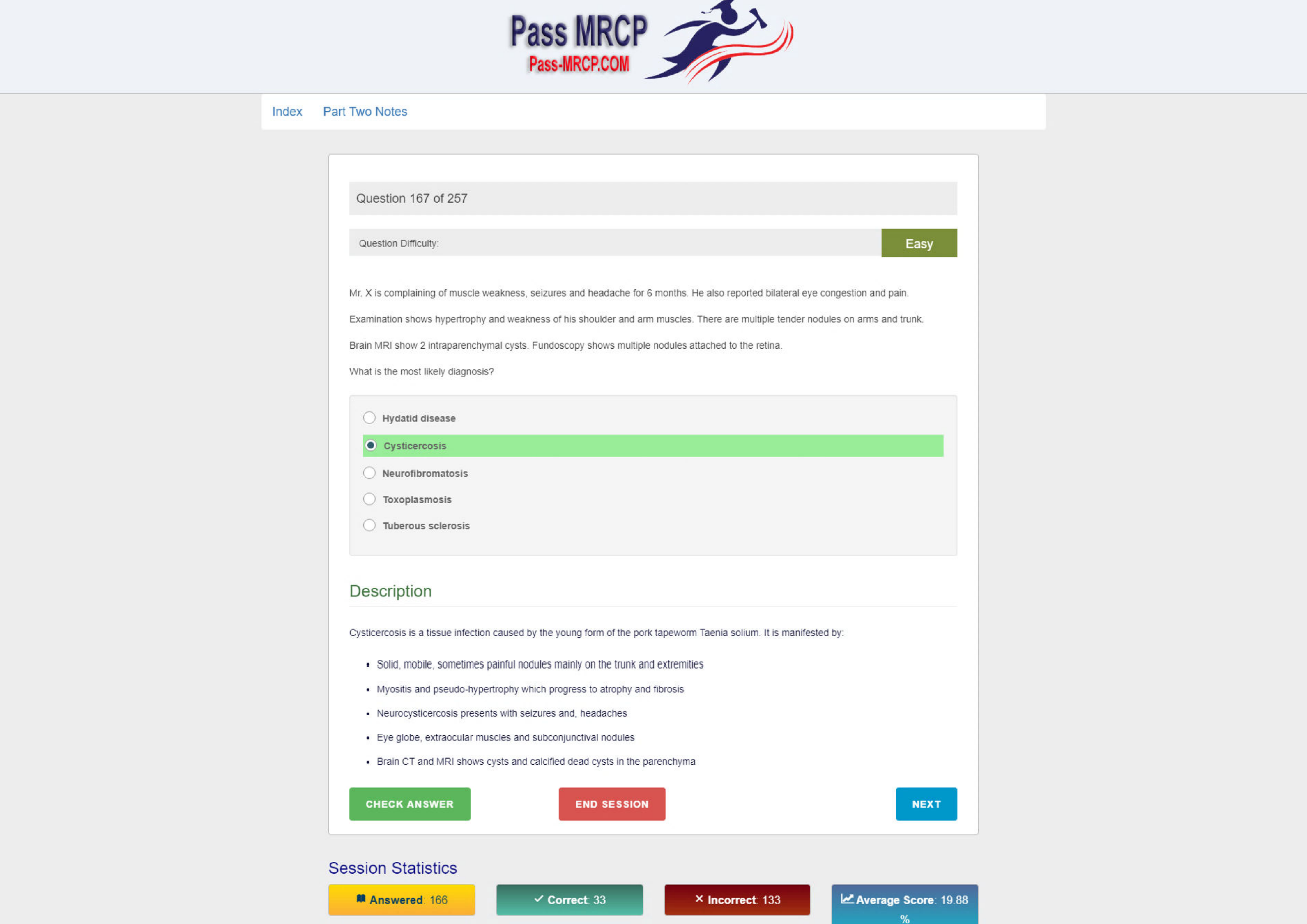
Description

Manifestations of S1 nerve root compression (L5/S1 disc prolapse)

- Sensory loss posterolateral aspect of leg and lateral aspect of foot
- Weakness in plantar flexion of foot
- Reduced ankle reflex
- Sciatic pain

Positive straight leg raising test for disc herniation shows decreased range of motion from 35 -70 degrees. Sciatic stretch test is done with positive straight leg raising test by passive dorsiflexion the ankle inducing sciatic pain)

The sciatic nerve innervates the skin of the foot, as well as the entire lower leg except for its medial side (supplied by the femoral nerve). It supplies the anterior and posterior compartment muscles of the lower leg and also the hamstring muscles.



Question 167 of 257

Question Difficulty: Easy

Mr. X is complaining of muscle weakness, seizures and headache for 6 months. He also reported bilateral eye congestion and pain.

Examination shows hypertrophy and weakness of his shoulder and arm muscles. There are multiple tender nodules on arms and trunk.

Brain MRI show 2 intraparenchymal cysts. Fundoscopy shows multiple nodules attached to the retina.

What is the most likely diagnosis?

○ Hydatid disease
● Cysticercosis
○ Neurofibromatosis
○ Toxoplasmosis
○ Tuberous sclerosis

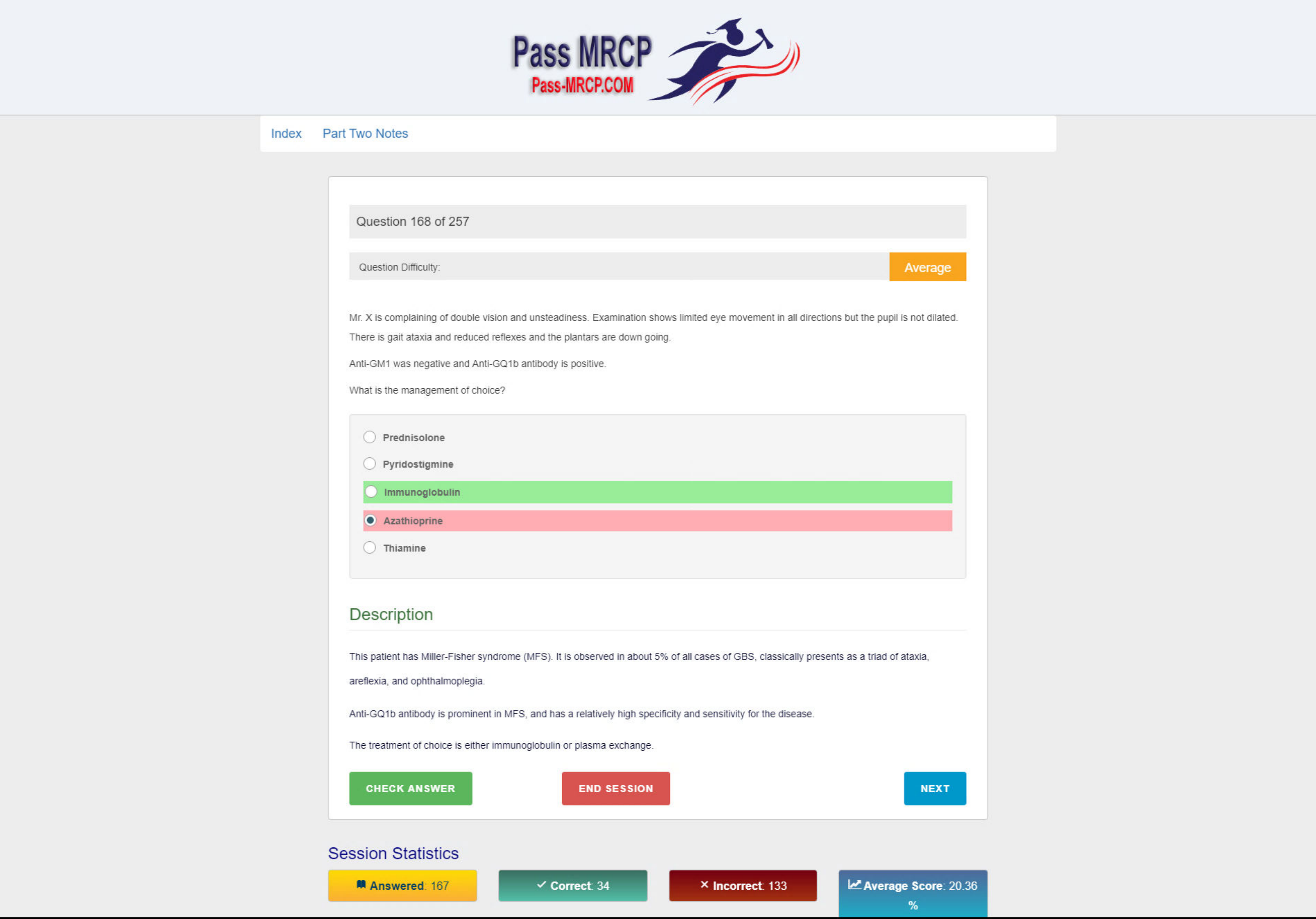
Description

Cysticercosis is a tissue infection caused by the young form of the pork tapeworm Taenia solium. It is manifested by:

- Solid, mobile, sometimes painful nodules mainly on the trunk and extremities
- Myositis and pseudo-hypertrophy which progress to atrophy and fibrosis
- Neurocysticercosis presents with seizures and, headaches
- Eye globe, extraocular muscles and subconjunctival nodules
- Brain CT and MRI shows cysts and calcified dead cysts in the parenchyma

Session Statistics

Answered: 166
✓ Correct: 33
× Incorrect: 133
Average Score: 19.88 %



Question 168 of 257

Question Difficulty: Average

Mr. X is complaining of double vision and unsteadiness. Examination shows limited eye movement in all directions but the pupil is not dilated. There is gait ataxia and reduced reflexes and the plantars are down going.

Anti-GM1 was negative and Anti-GQ1b antibody is positive.

What is the management of choice?

○ **Prednisolone**
○ **Pyridostigmine**
○ **Immunoglobulin**
● **Azathioprine**
○ **Thiamine**

Description

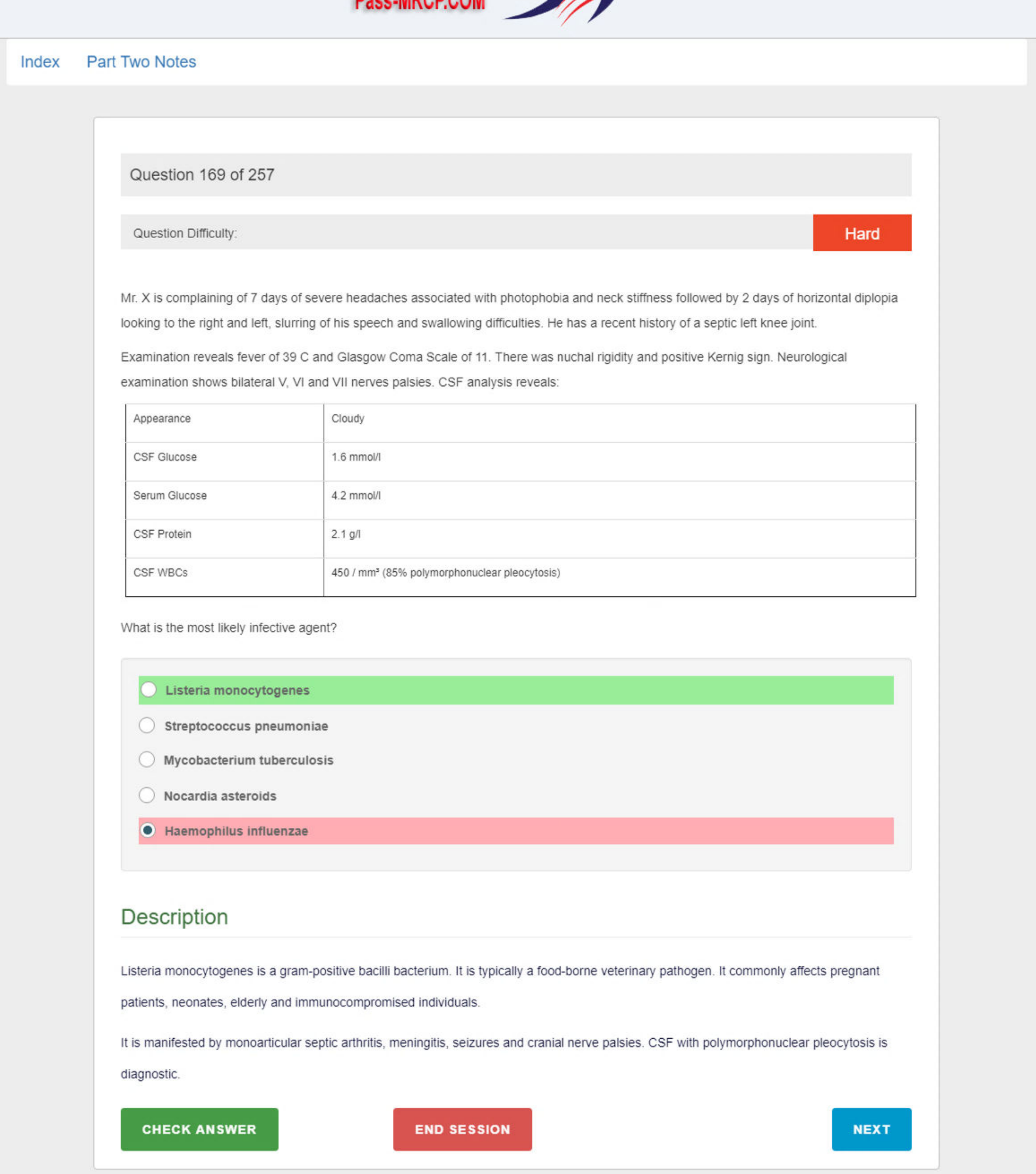
This patient has Miller-Fisher syndrome (MFS). It is observed in about 5% of all cases of GBS, classically presents as a triad of ataxia, areflexia, and ophthalmoplegia.

Anti-GQ1b antibody is prominent in MFS, and has a relatively high specificity and sensitivity for the disease.

The treatment of choice is either immunoglobulin or plasma exchange.

Session Statistics

Answered: 167
✓ Correct: 34
✕ Incorrect: 133
Average Score: 20.36 %



Question 169 of 257

Question Difficulty: **Hard**

Mr. X is complaining of 7 days of severe headaches associated with photophobia and neck stiffness followed by 2 days of horizontal diplopia looking to the right and left, slurring of his speech and swallowing difficulties. He has a recent history of a septic left knee joint.

Examination reveals fever of 39 C and Glasgow Coma Scale of 11. There was nuchal rigidity and positive Kernig sign. Neurological examination shows bilateral V, VI and VII nerves palsies. CSF analysis reveals:

Appearance	Cloudy
CSF Glucose	1.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	2.1 g/l
CSF WBCs	450 / mm³ (85% polymorphonuclear pleocytosis)

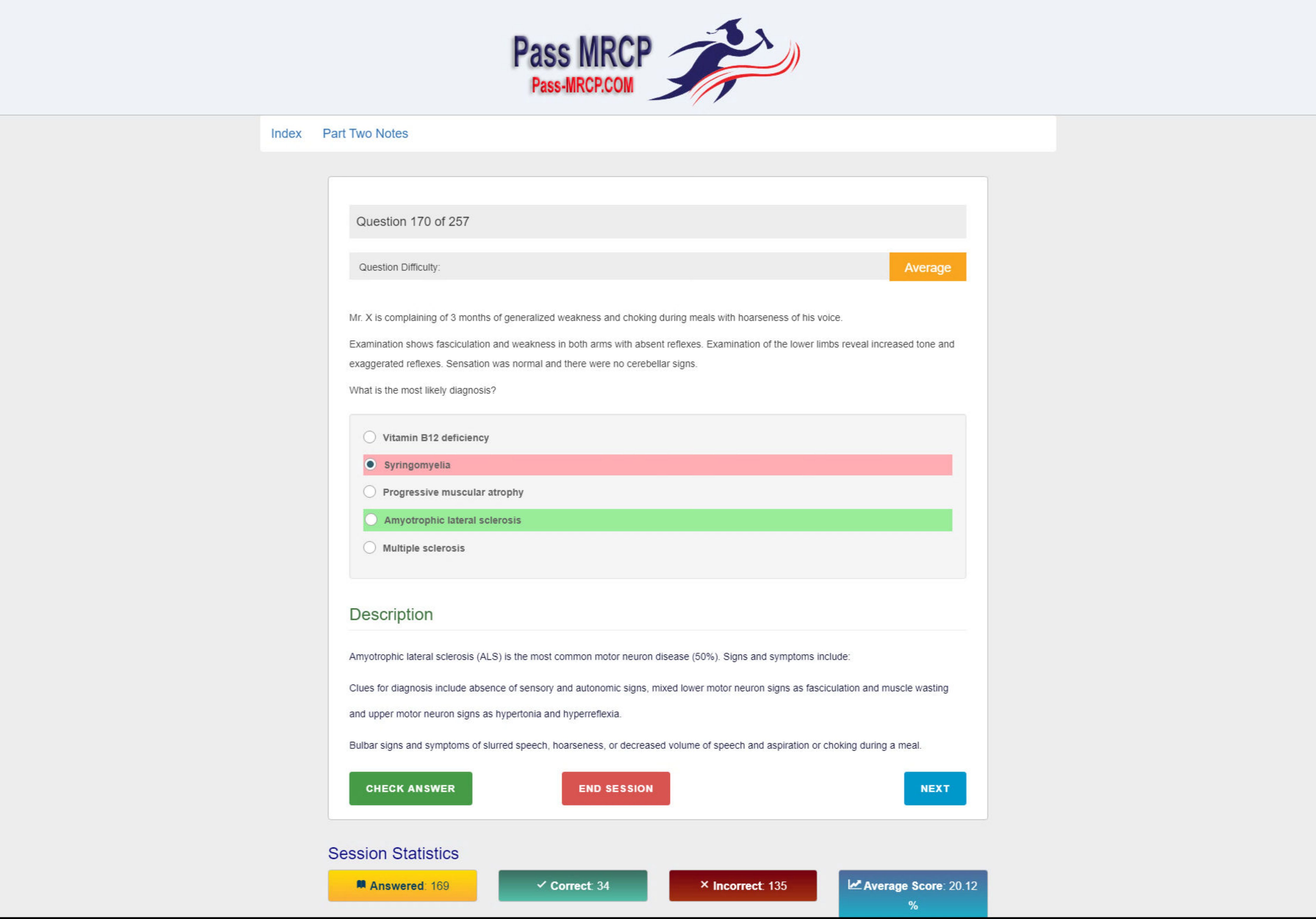
What is the most likely infective agent?

- ○ **Listeria monocytogenes**
- ○ **Streptococcus pneumoniae**
- ○ **Mycobacterium tuberculosis**
- ○ **Nocardia asteroids**
- ● **Haemophilus influenzae**

Description

Listeria monocytogenes is a gram-positive bacilli bacterium. It is typically a food-borne veterinary pathogen. It commonly affects pregnant patients, neonates, elderly and immunocompromised individuals.

It is manifested by monoarticular septic arthritis, meningitis, seizures and cranial nerve palsies. CSF with polymorphonuclear pleocytosis is diagnostic.



Question 170 of 257

Question Difficulty: Average

Mr. X is complaining of 3 months of generalized weakness and choking during meals with hoarseness of his voice.

Examination shows fasciculation and weakness in both arms with absent reflexes. Examination of the lower limbs reveal increased tone and exaggerated reflexes. Sensation was normal and there were no cerebellar signs.

What is the most likely diagnosis?

- ○ Vitamin B12 deficiency
- ● Syringomyelia
- ○ Progressive muscular atrophy
- ○ Amyotrophic lateral sclerosis
- ○ Multiple sclerosis

Description

Amyotrophic lateral sclerosis (ALS) is the most common motor neuron disease (50%). Signs and symptoms include:

Clues for diagnosis include absence of sensory and autonomic signs, mixed lower motor neuron signs as fasciculation and muscle wasting and upper motor neuron signs as hypertonia and hyperreflexia.

Bulbar signs and symptoms of slurred speech, hoarseness, or decreased volume of speech and aspiration or choking during a meal.

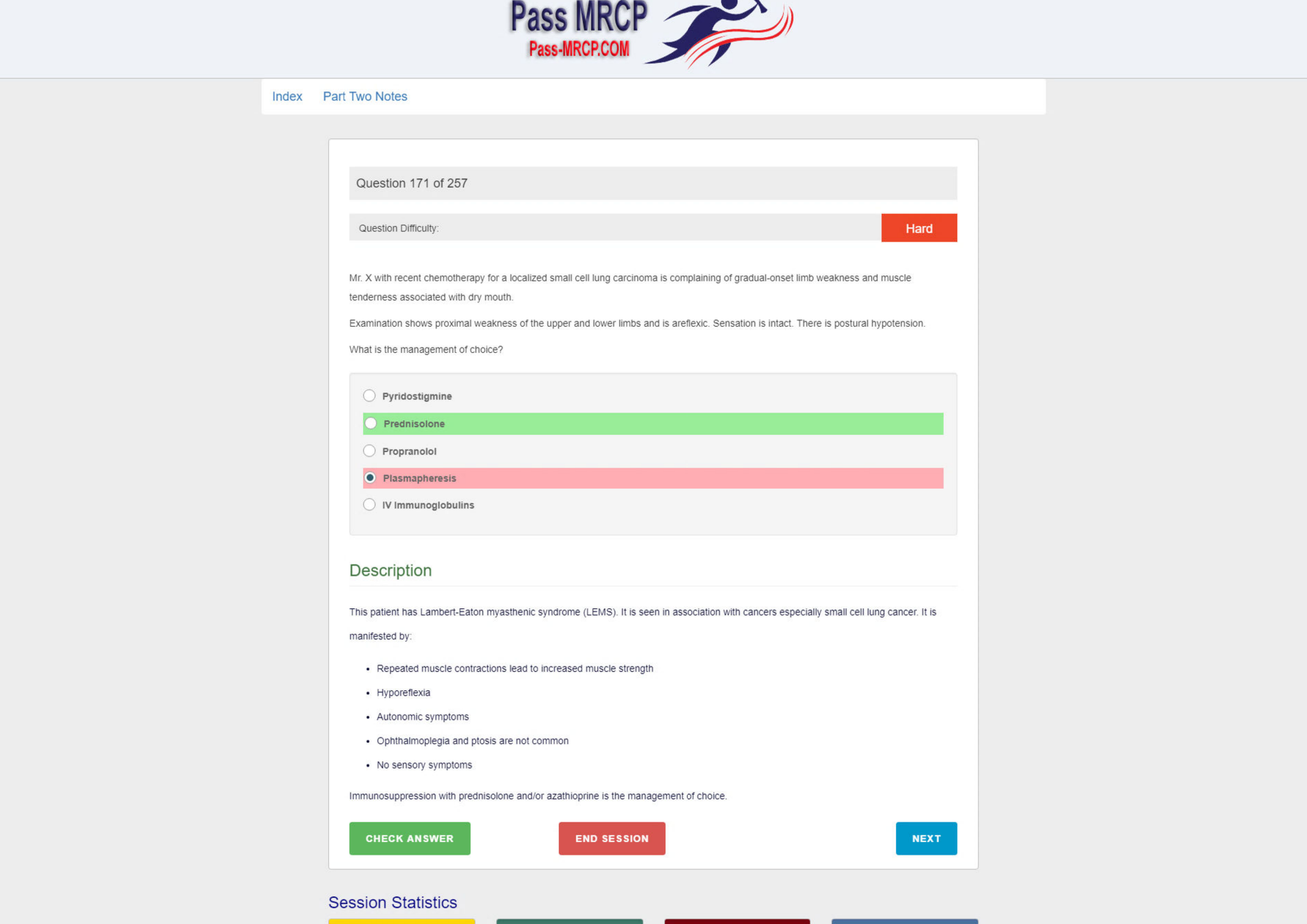
Session Statistics

Answered: 169

✓ Correct: 34

✕ Incorrect: 135

Average Score: 20.12 %



Question 171 of 257

Question Difficulty: Hard

Mr. X with recent chemotherapy for a localized small cell lung carcinoma is complaining of gradual-onset limb weakness and muscle tenderness associated with dry mouth.

Examination shows proximal weakness of the upper and lower limbs and is areflexic. Sensation is intact. There is postural hypotension.

What is the management of choice?

○ **Pyridostigmine**

○ **Prednisolone**

○ **Propranolol**

● **Plasmapheresis**

○ **IV Immunoglobulins**

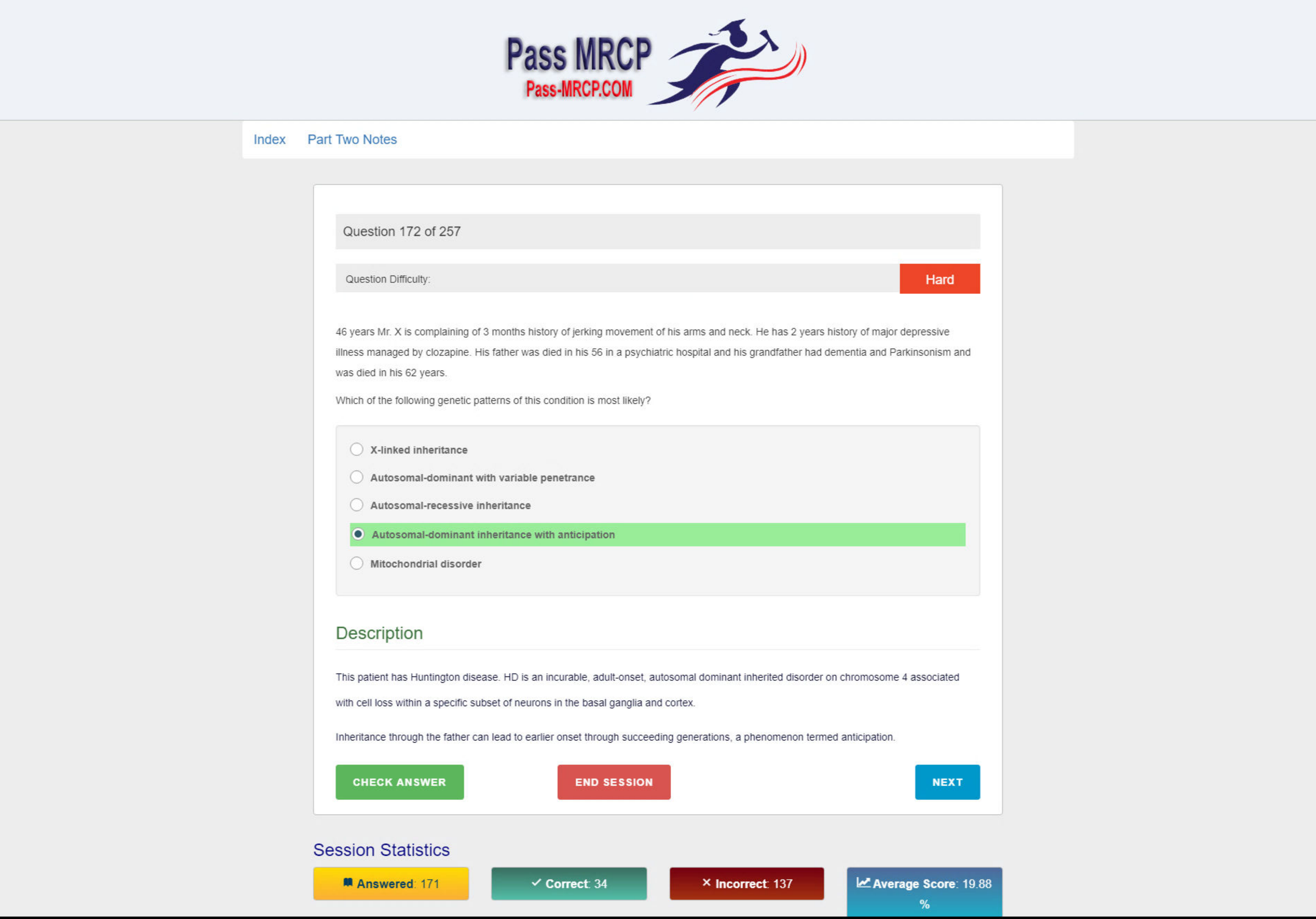
Description

This patient has Lambert-Eaton myasthenic syndrome (LEMS). It is seen in association with cancers especially small cell lung cancer. It is manifested by:

- Repeated muscle contractions lead to increased muscle strength
- Hyporeflexia
- Autonomic symptoms
- Ophthalmoplegia and ptosis are not common
- No sensory symptoms

Immunosuppression with prednisolone and/or azathioprine is the management of choice.

Session Statistics



Question 172 of 257

Question Difficulty: Hard

46 years Mr. X is complaining of 3 months history of jerking movement of his arms and neck. He has 2 years history of major depressive illness managed by clozapine. His father was died in his 56 in a psychiatric hospital and his grandfather had dementia and Parkinsonism and was died in his 62 years.

Which of the following genetic patterns of this condition is most likely?

- ○ **X-linked inheritance**
- ○ **Autosomal-dominant with variable penetrance**
- ○ **Autosomal-recessive inheritance**
- ● **Autosomal-dominant inheritance with anticipation**
- ○ **Mitochondrial disorder**

Description

This patient has Huntington disease. HD is an incurable, adult-onset, autosomal dominant inherited disorder on chromosome 4 associated with cell loss within a specific subset of neurons in the basal ganglia and cortex.

Inheritance through the father can lead to earlier onset through succeeding generations, a phenomenon termed anticipation.

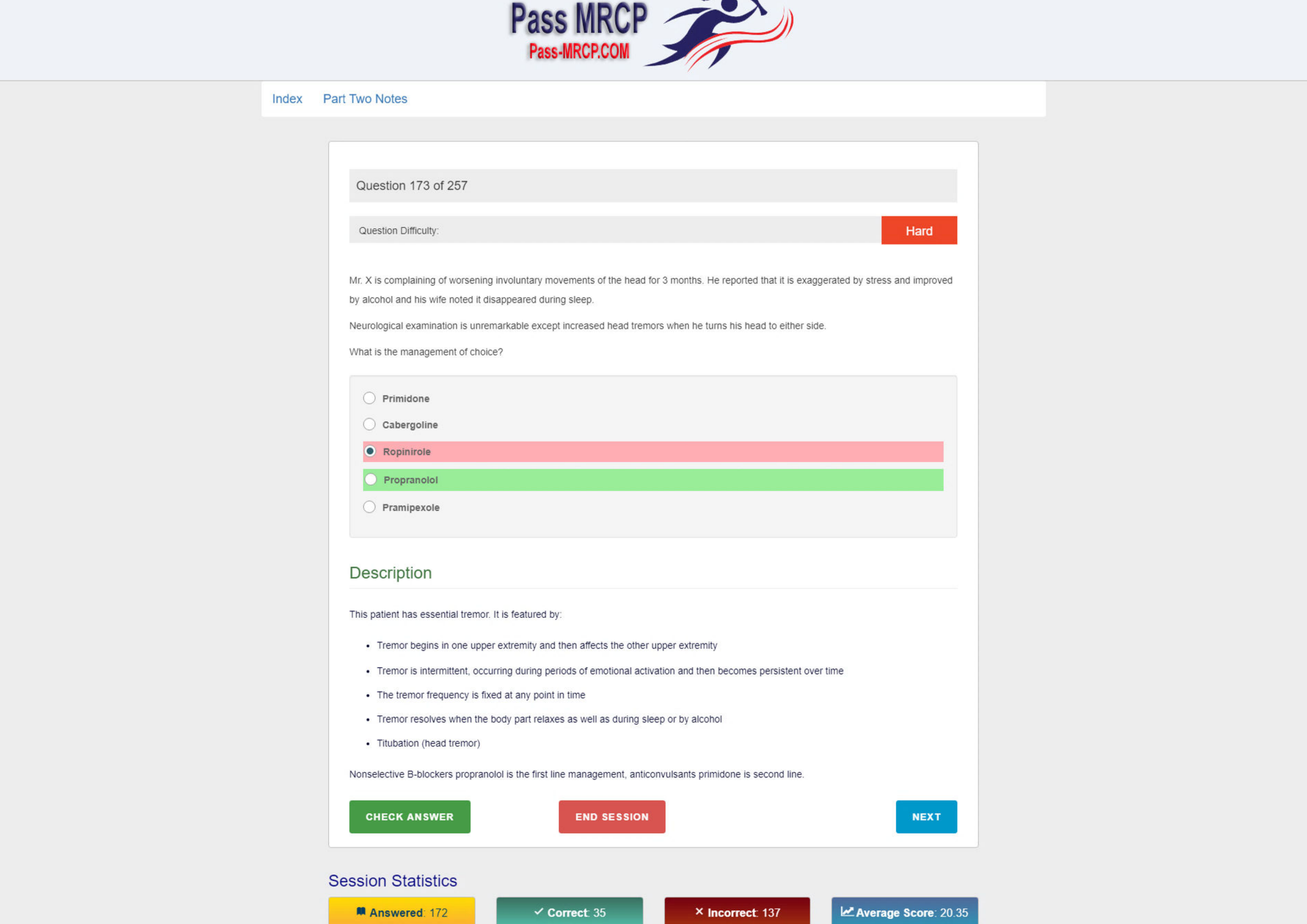
Session Statistics

Answered: 171

✓ **Correct**: 34

× **Incorrect**: 137

Average Score: 19.88 %



Question 173 of 257

Question Difficulty: Hard

Mr. X is complaining of worsening involuntary movements of the head for 3 months. He reported that it is exaggerated by stress and improved by alcohol and his wife noted it disappeared during sleep.

Neurological examination is unremarkable except increased head tremors when he turns his head to either side.

What is the management of choice?

○ Primidone
○ Cabergoline
● Ropinirole
○ Propranolol
○ Pramipexole

Description

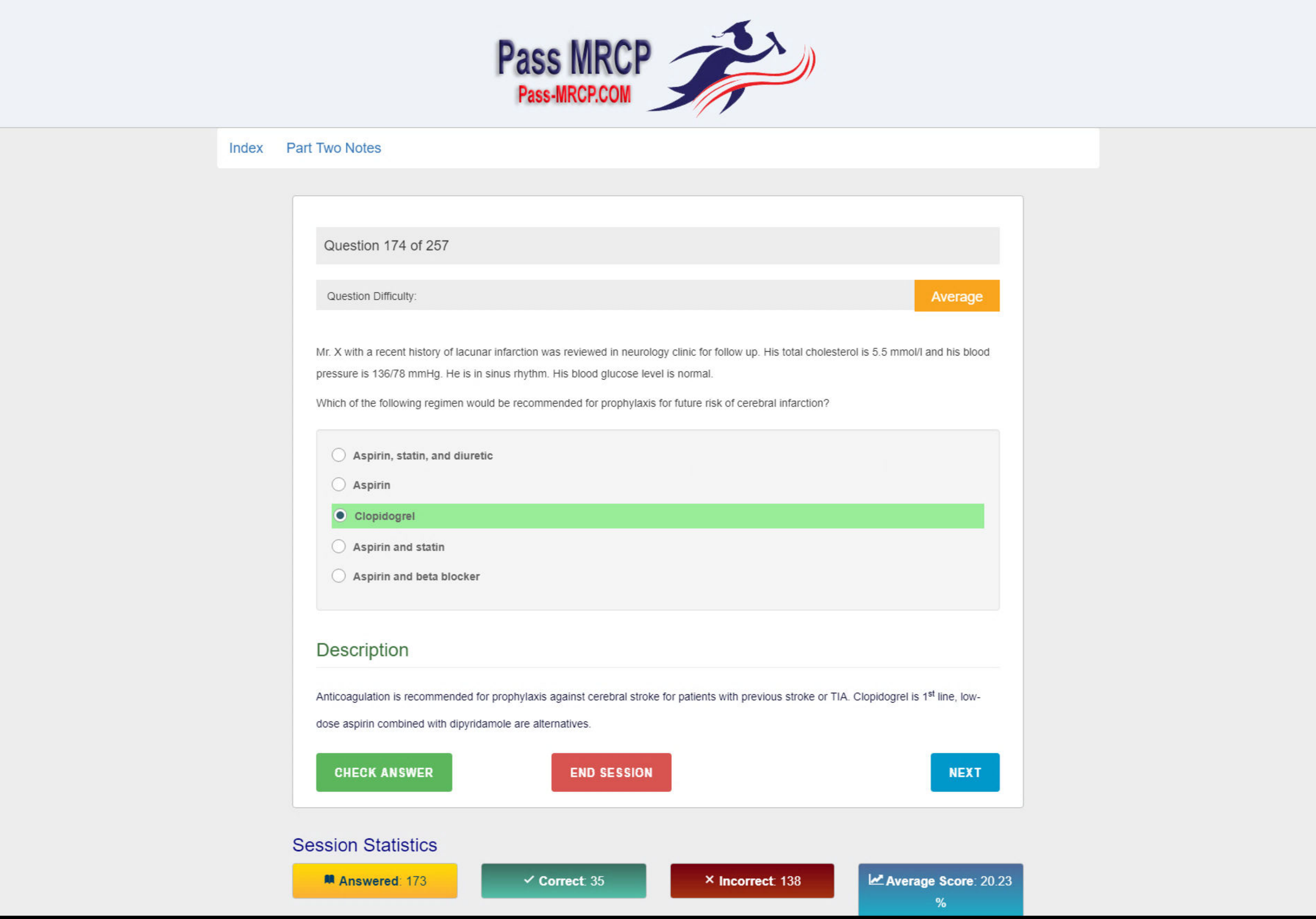
This patient has essential tremor. It is featured by:

- Tremor begins in one upper extremity and then affects the other upper extremity
- Tremor is intermittent, occurring during periods of emotional activation and then becomes persistent over time
- The tremor frequency is fixed at any point in time
- Tremor resolves when the body part relaxes as well as during sleep or by alcohol
- Titubation (head tremor)

Nonselective B-blockers propranolol is the first line management, anticonvulsants primidone is second line.

Session Statistics

Answered: 172
✓ **Correct**: 35
✕ **Incorrect**: 137
Average Score: 20.35



Question 174 of 257

Question Difficulty: Average

Mr. X with a recent history of lacunar infarction was reviewed in neurology clinic for follow up. His total cholesterol is 5.5 mmol/l and his blood pressure is 136/78 mmHg. He is in sinus rhythm. His blood glucose level is normal.

Which of the following regimen would be recommended for prophylaxis for future risk of cerebral infarction?

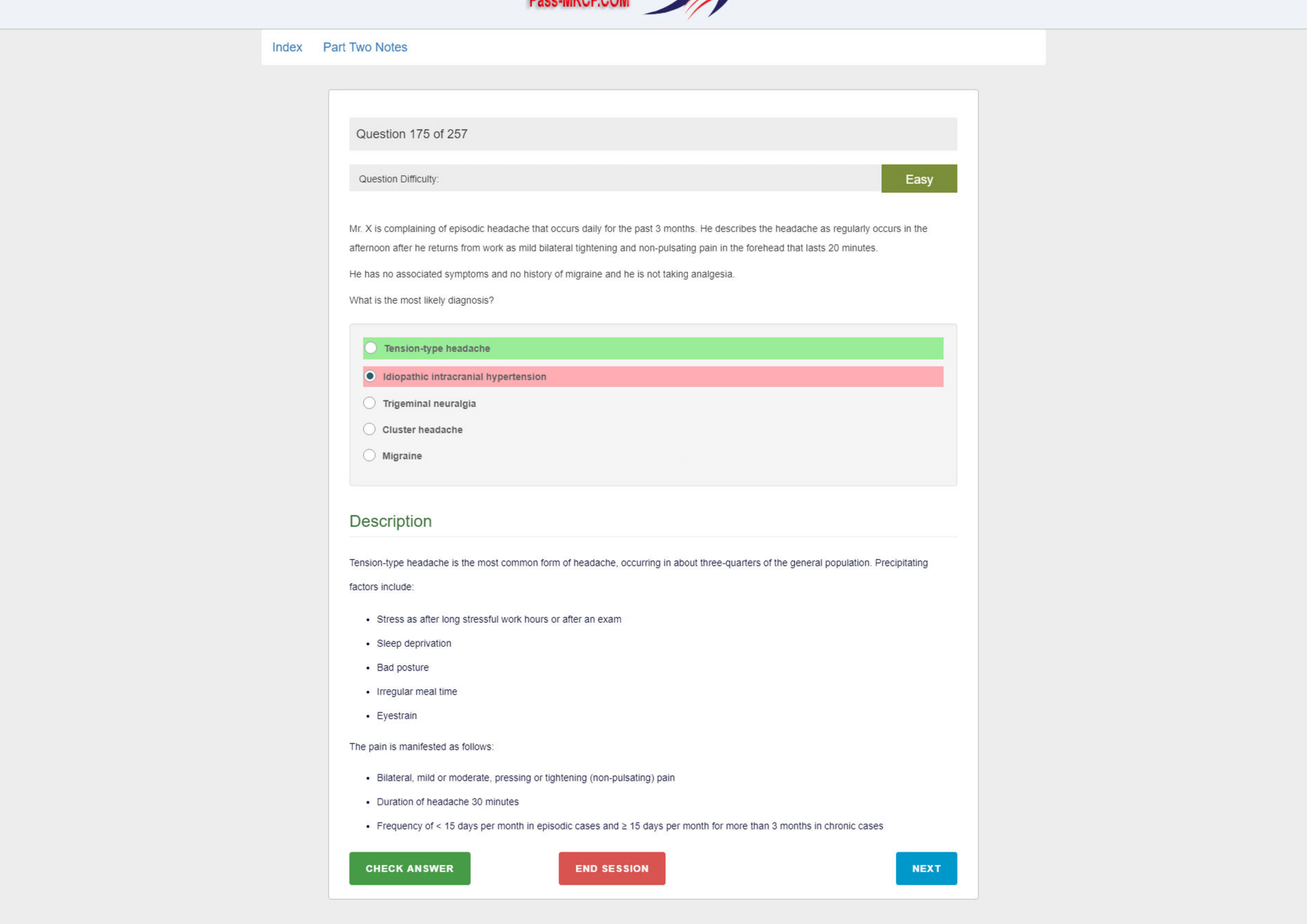
- ○ Aspirin, statin, and diuretic
- ○ Aspirin
- ● Clopidogrel
- ○ Aspirin and statin
- ○ Aspirin and beta blocker

Description

Anticoagulation is recommended for prophylaxis against cerebral stroke for patients with previous stroke or TIA. Clopidogrel is 1st line, low-dose aspirin combined with dipyridamole are alternatives.

Session Statistics

Answered: 173
✓ Correct: 35
✕ Incorrect: 138
Average Score: 20.23 %



Question 175 of 257

Question Difficulty: Easy

Mr. X is complaining of episodic headache that occurs daily for the past 3 months. He describes the headache as regularly occurs in the afternoon after he returns from work as mild bilateral tightening and non-pulsating pain in the forehead that lasts 20 minutes.

He has no associated symptoms and no history of migraine and he is not taking analgesia.

What is the most likely diagnosis?

○ **Tension-type headache**
● **Idiopathic intracranial hypertension**
○ **Trigeminal neuralgia**
○ **Cluster headache**
○ **Migraine**

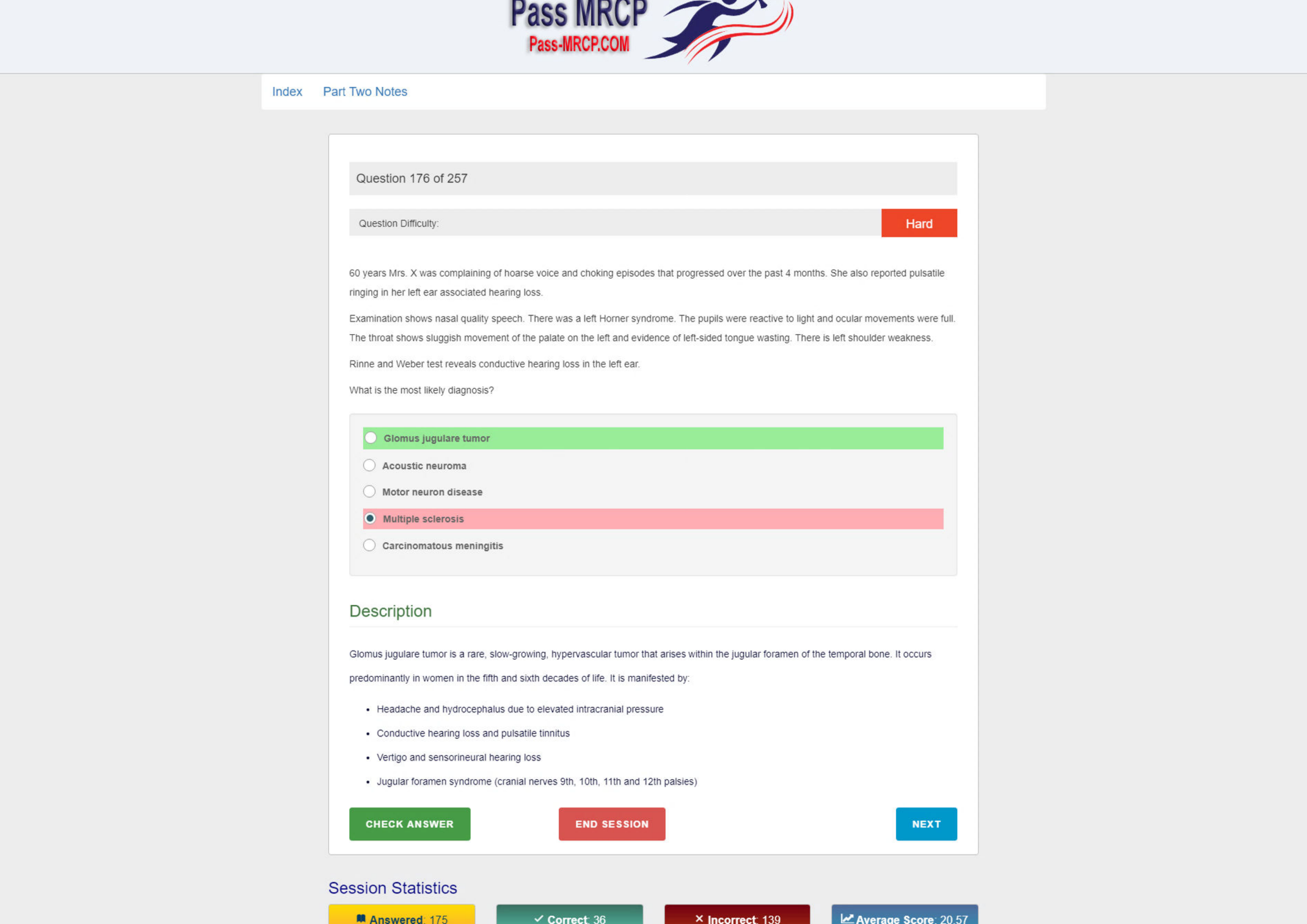
Description

Tension-type headache is the most common form of headache, occurring in about three-quarters of the general population. Precipitating factors include:

- Stress as after long stressful work hours or after an exam
- Sleep deprivation
- Bad posture
- Irregular meal time
- Eyestrain

The pain is manifested as follows:

- Bilateral, mild or moderate, pressing or tightening (non-pulsating) pain
- Duration of headache 30 minutes
- Frequency of < 15 days per month in episodic cases and ≥ 15 days per month for more than 3 months in chronic cases



Question 176 of 257

Question Difficulty: Hard

60 years Mrs. X was complaining of hoarse voice and choking episodes that progressed over the past 4 months. She also reported pulsatile ringing in her left ear associated hearing loss.

Examination shows nasal quality speech. There was a left Horner syndrome. The pupils were reactive to light and ocular movements were full. The throat shows sluggish movement of the palate on the left and evidence of left-sided tongue wasting. There is left shoulder weakness.

Rinne and Weber test reveals conductive hearing loss in the left ear.

What is the most likely diagnosis?

○ **Glomus jugulare tumor**
○ **Acoustic neuroma**
○ **Motor neuron disease**
● **Multiple sclerosis**
○ **Carcinomatous meningitis**

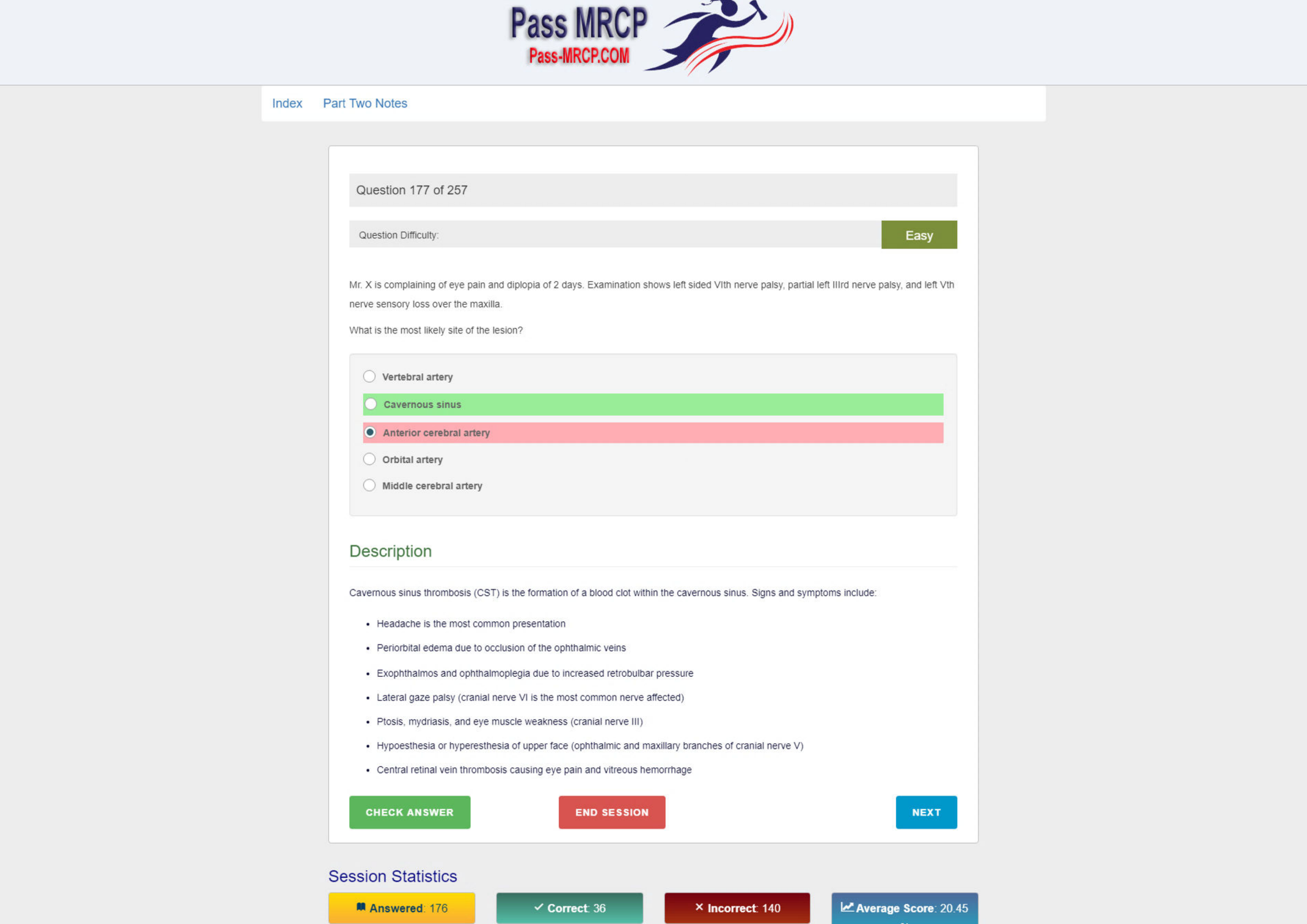
Description

Glomus jugulare tumor is a rare, slow-growing, hypervascular tumor that arises within the jugular foramen of the temporal bone. It occurs predominantly in women in the fifth and sixth decades of life. It is manifested by:

- Headache and hydrocephalus due to elevated intracranial pressure
- Conductive hearing loss and pulsatile tinnitus
- Vertigo and sensorineural hearing loss
- Jugular foramen syndrome (cranial nerves 9th, 10th, 11th and 12th palsies)

Session Statistics

Answered: 175
✓ Correct: 36
✕ Incorrect: 139
Average Score: 20.57



Question 177 of 257

Question Difficulty: **Easy**

Mr. X is complaining of eye pain and diplopia of 2 days. Examination shows left sided VIth nerve palsy, partial left IIIrd nerve palsy, and left Vth nerve sensory loss over the maxilla.

What is the most likely site of the lesion?

- ○ **Vertebral artery**
- ○ **Cavernous sinus**
- ● **Anterior cerebral artery**
- ○ **Orbital artery**
- ○ **Middle cerebral artery**

Description

Cavernous sinus thrombosis (CST) is the formation of a blood clot within the cavernous sinus. Signs and symptoms include:

- Headache is the most common presentation
- Periorbital edema due to occlusion of the ophthalmic veins
- Exophthalmos and ophthalmoplegia due to increased retrobulbar pressure
- Lateral gaze palsy (cranial nerve VI is the most common nerve affected)
- Ptosis, mydriasis, and eye muscle weakness (cranial nerve III)
- Hypoesthesia or hyperesthesia of upper face (ophthalmic and maxillary branches of cranial nerve V)
- Central retinal vein thrombosis causing eye pain and vitreous hemorrhage

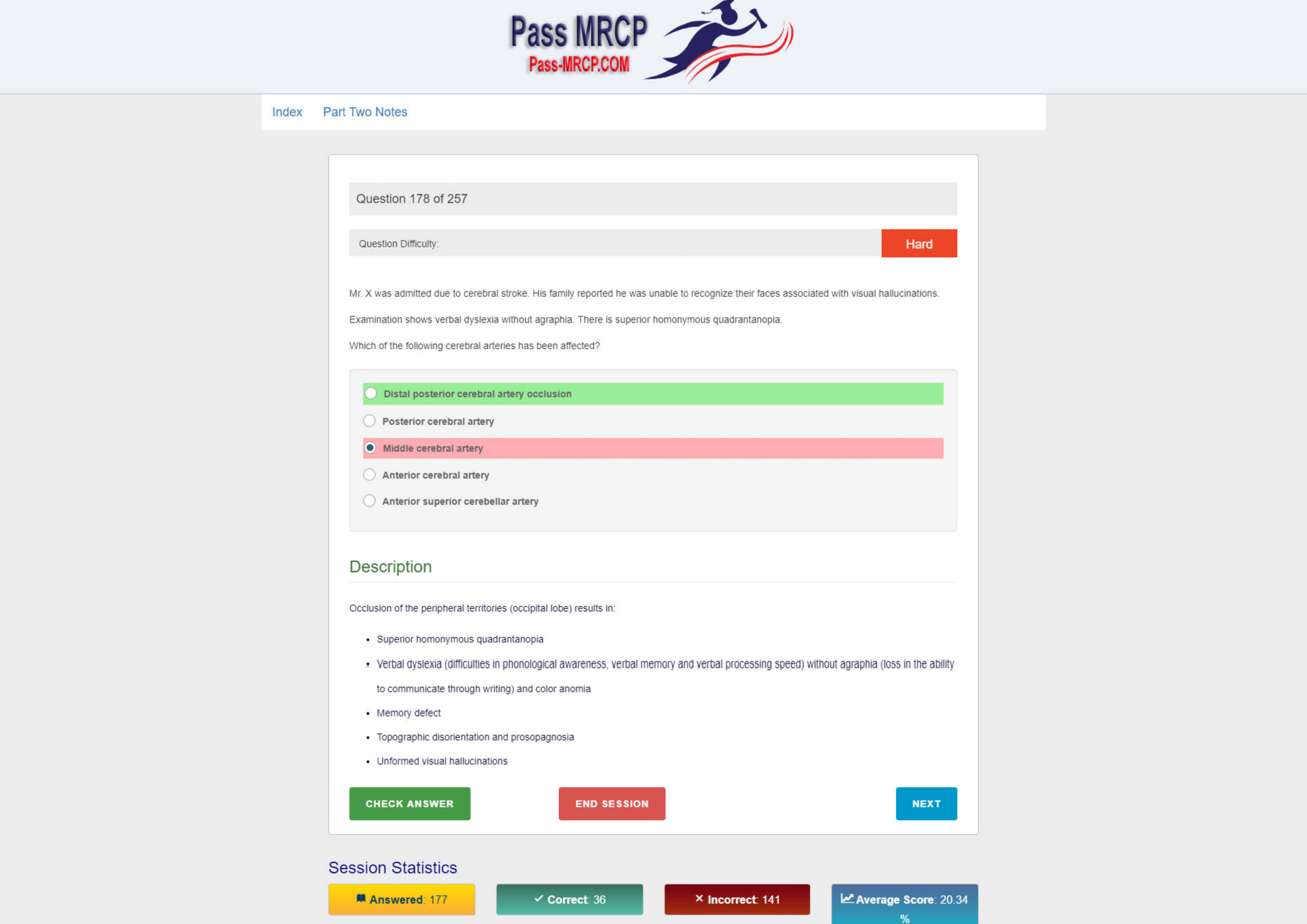
Session Statistics

Answered: 176

✓ **Correct**: 36

✕ **Incorrect**: 140

Average Score: 20.45



Question 178 of 257

Question Difficulty: Hard

Mr. X was admitted due to cerebral stroke. His family reported he was unable to recognize their faces associated with visual hallucinations.

Examination shows verbal dyslexia without agraphia. There is superior homonymous quadrantanopia.

Which of the following cerebral arteries has been affected?

○ **Distal posterior cerebral artery occlusion**
○ **Posterior cerebral artery**
● **Middle cerebral artery**
○ **Anterior cerebral artery**
○ **Anterior superior cerebellar artery**

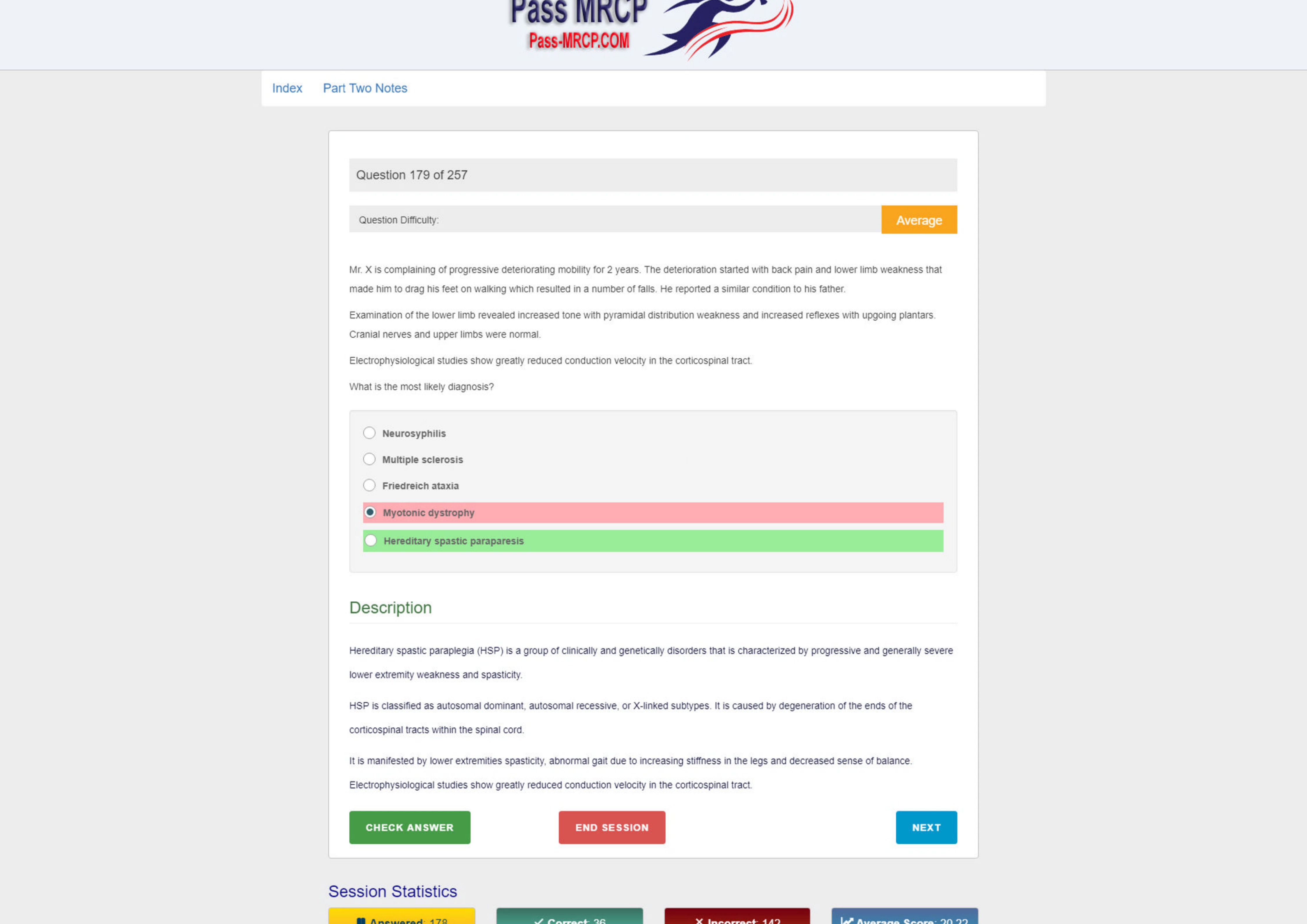
Description

Occlusion of the peripheral territories (occipital lobe) results in:

- Superior homonymous quadrantanopia
- Verbal dyslexia (difficulties in phonological awareness, verbal memory and verbal processing speed) without agraphia (loss in the ability to communicate through writing) and color anomia
- Memory defect
- Topographic disorientation and prosopagnosia
- Unformed visual hallucinations

Session Statistics

Answered: 177
Correct: 36
Incorrect: 141
Average Score: 20.34 %



Question 179 of 257

Question Difficulty: Average

Mr. X is complaining of progressive deteriorating mobility for 2 years. The deterioration started with back pain and lower limb weakness that made him to drag his feet on walking which resulted in a number of falls. He reported a similar condition to his father.

Examination of the lower limb revealed increased tone with pyramidal distribution weakness and increased reflexes with upgoing plantars. Cranial nerves and upper limbs were normal.

Electrophysiological studies show greatly reduced conduction velocity in the corticospinal tract.

What is the most likely diagnosis?

- ○ Neurosyphilis
- ○ Multiple sclerosis
- ○ Friedreich ataxia
- ● Myotonic dystrophy
- ○ Hereditary spastic paraparesis

Description

Hereditary spastic paraplegia (HSP) is a group of clinically and genetically disorders that is characterized by progressive and generally severe lower extremity weakness and spasticity.

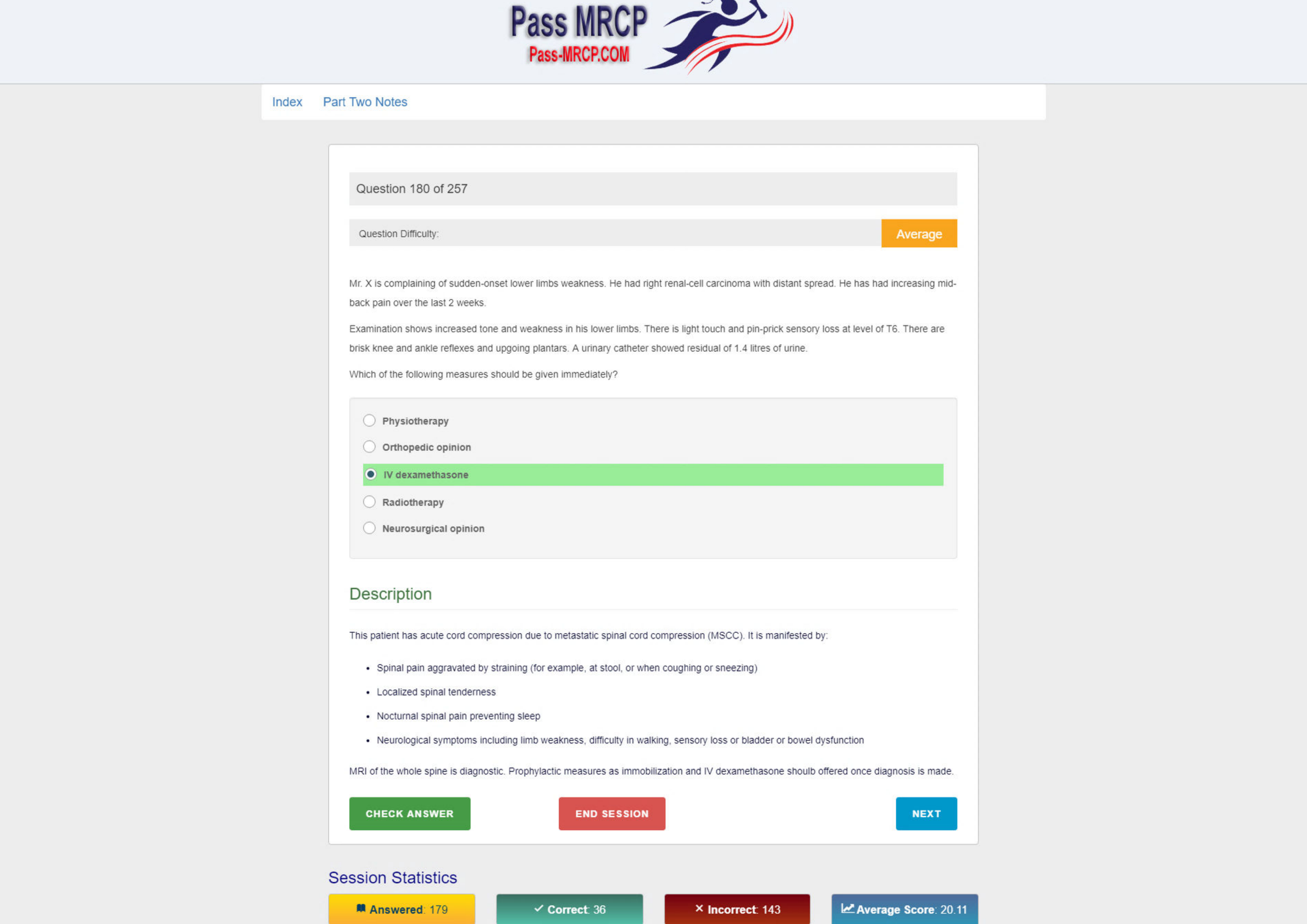
HSP is classified as autosomal dominant, autosomal recessive, or X-linked subtypes. It is caused by degeneration of the ends of the corticospinal tracts within the spinal cord.

It is manifested by lower extremities spasticity, abnormal gait due to increasing stiffness in the legs and decreased sense of balance.

Electrophysiological studies show greatly reduced conduction velocity in the corticospinal tract.

Session Statistics

Answered: 178
Correct: 36
Incorrect: 142
Average Score: 20.22



Question 180 of 257

Question Difficulty: **Average**

Mr. X is complaining of sudden-onset lower limbs weakness. He had right renal-cell carcinoma with distant spread. He has had increasing mid-back pain over the last 2 weeks.

Examination shows increased tone and weakness in his lower limbs. There is light touch and pin-prick sensory loss at level of T6. There are brisk knee and ankle reflexes and upgoing plantars. A urinary catheter showed residual of 1.4 litres of urine.

Which of the following measures should be given immediately?

○ **Physiotherapy**
○ **Orthopedic opinion**
● **IV dexamethasone**
○ **Radiotherapy**
○ **Neurosurgical opinion**

Description

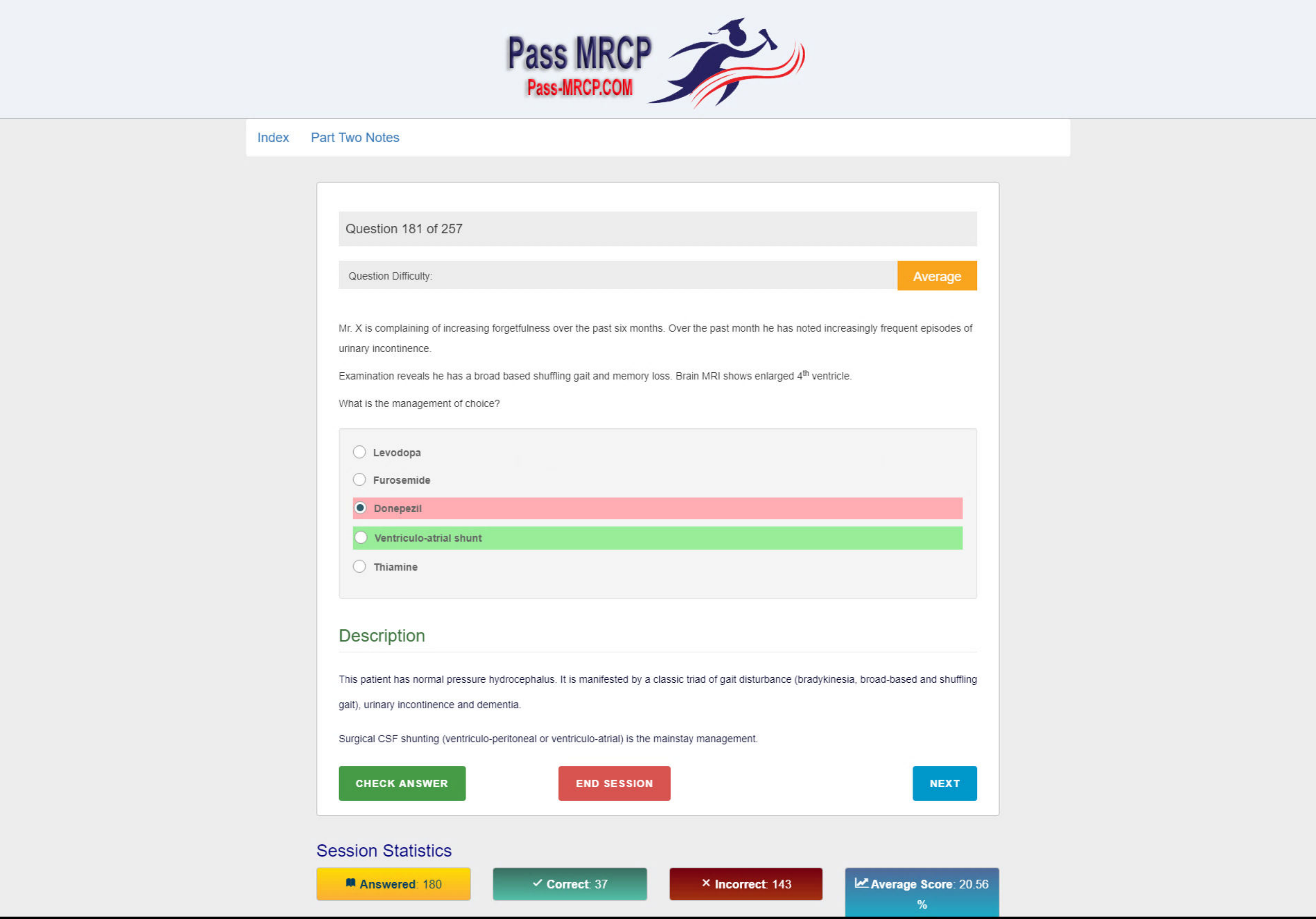
This patient has acute cord compression due to metastatic spinal cord compression (MSCC). It is manifested by:

- Spinal pain aggravated by straining (for example, at stool, or when coughing or sneezing)
- Localized spinal tenderness
- Nocturnal spinal pain preventing sleep
- Neurological symptoms including limb weakness, difficulty in walking, sensory loss or bladder or bowel dysfunction

MRI of the whole spine is diagnostic. Prophylactic measures as immobilization and IV dexamethasone shoulb offered once diagnosis is made.

Session Statistics

Answered: 179
Correct: 36
Incorrect: 143
Average Score: 20.11



Question 181 of 257

Question Difficulty: Average

Mr. X is complaining of increasing forgetfulness over the past six months. Over the past month he has noted increasingly frequent episodes of urinary incontinence.

Examination reveals he has a broad based shuffling gait and memory loss. Brain MRI shows enlarged 4th ventricle.

What is the management of choice?

- ○ Levodopa
- ○ Furosemide
- ● Donepezil
- ○ Ventriculo-atrial shunt
- ○ Thiamine

Description

This patient has normal pressure hydrocephalus. It is manifested by a classic triad of gait disturbance (bradykinesia, broad-based and shuffling gait), urinary incontinence and dementia.

Surgical CSF shunting (ventriculo-peritoneal or ventriculo-atrial) is the mainstay management.

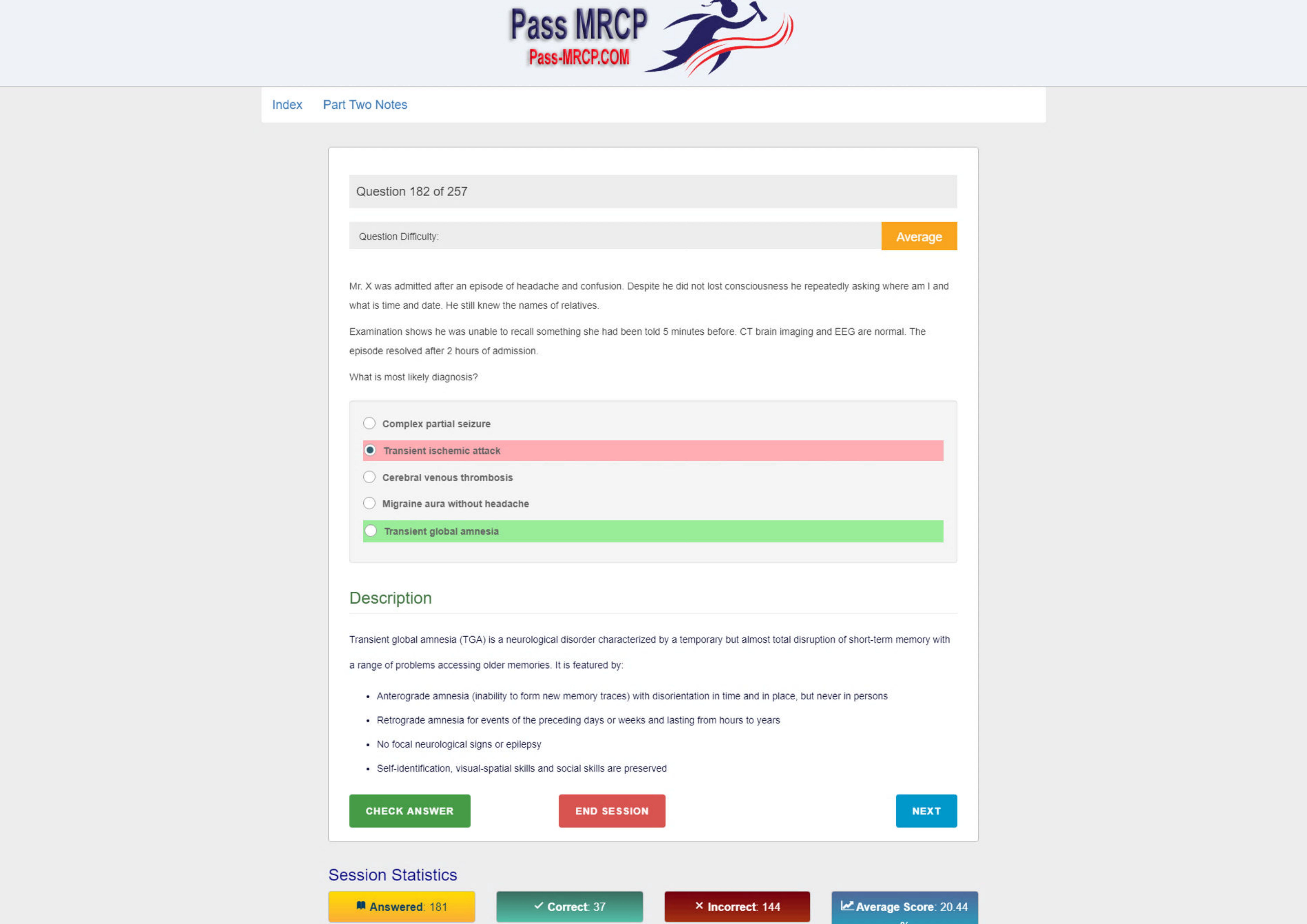
Session Statistics

Answered: 180

✓ **Correct**: 37

× **Incorrect**: 143

Average Score: 20.56 %



Question 182 of 257

Question Difficulty: **Average**

Mr. X was admitted after an episode of headache and confusion. Despite he did not lost consciousness he repeatedly asking where am I and what is time and date. He still knew the names of relatives.

Examination shows he was unable to recall something she had been told 5 minutes before. CT brain imaging and EEG are normal. The episode resolved after 2 hours of admission.

What is most likely diagnosis?

○ **Complex partial seizure**

● **Transient ischemic attack**

○ **Cerebral venous thrombosis**

○ **Migraine aura without headache**

○ **Transient global amnesia**

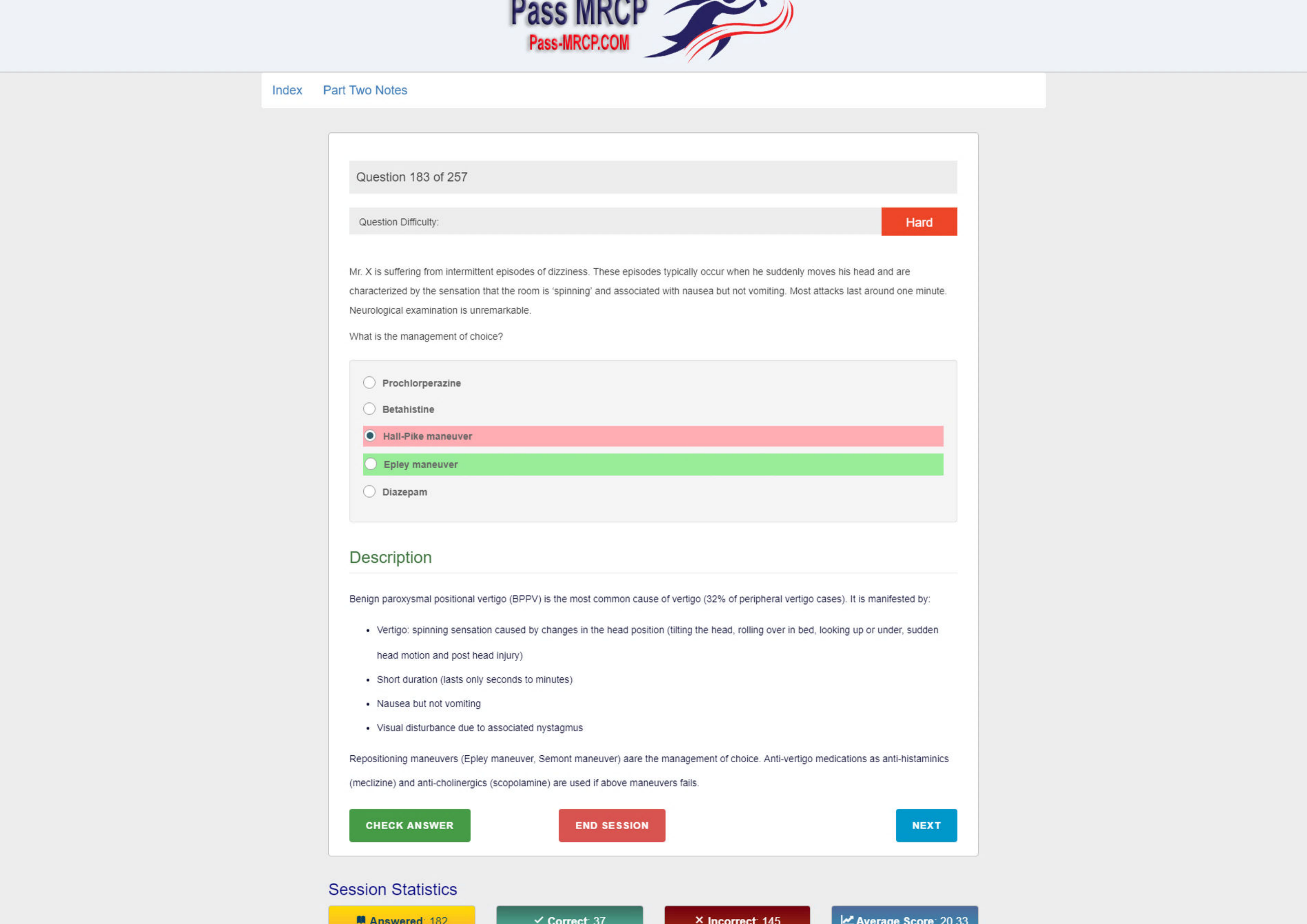
Description

Transient global amnesia (TGA) is a neurological disorder characterized by a temporary but almost total disruption of short-term memory with a range of problems accessing older memories. It is featured by:

- Anterograde amnesia (inability to form new memory traces) with disorientation in time and in place, but never in persons
- Retrograde amnesia for events of the preceding days or weeks and lasting from hours to years
- No focal neurological signs or epilepsy
- Self-identification, visual-spatial skills and social skills are preserved

Session Statistics

Answered: 181
Correct: 37
Incorrect: 144
Average Score: 20.44 %



Question 183 of 257

Question Difficulty: Hard

Mr. X is suffering from intermittent episodes of dizziness. These episodes typically occur when he suddenly moves his head and are characterized by the sensation that the room is 'spinning' and associated with nausea but not vomiting. Most attacks last around one minute. Neurological examination is unremarkable.

What is the management of choice?

○ **Prochlorperazine**
○ **Betahistine**
● **Hall-Pike maneuver**
○ **Epley maneuver**
○ **Diazepam**

Description

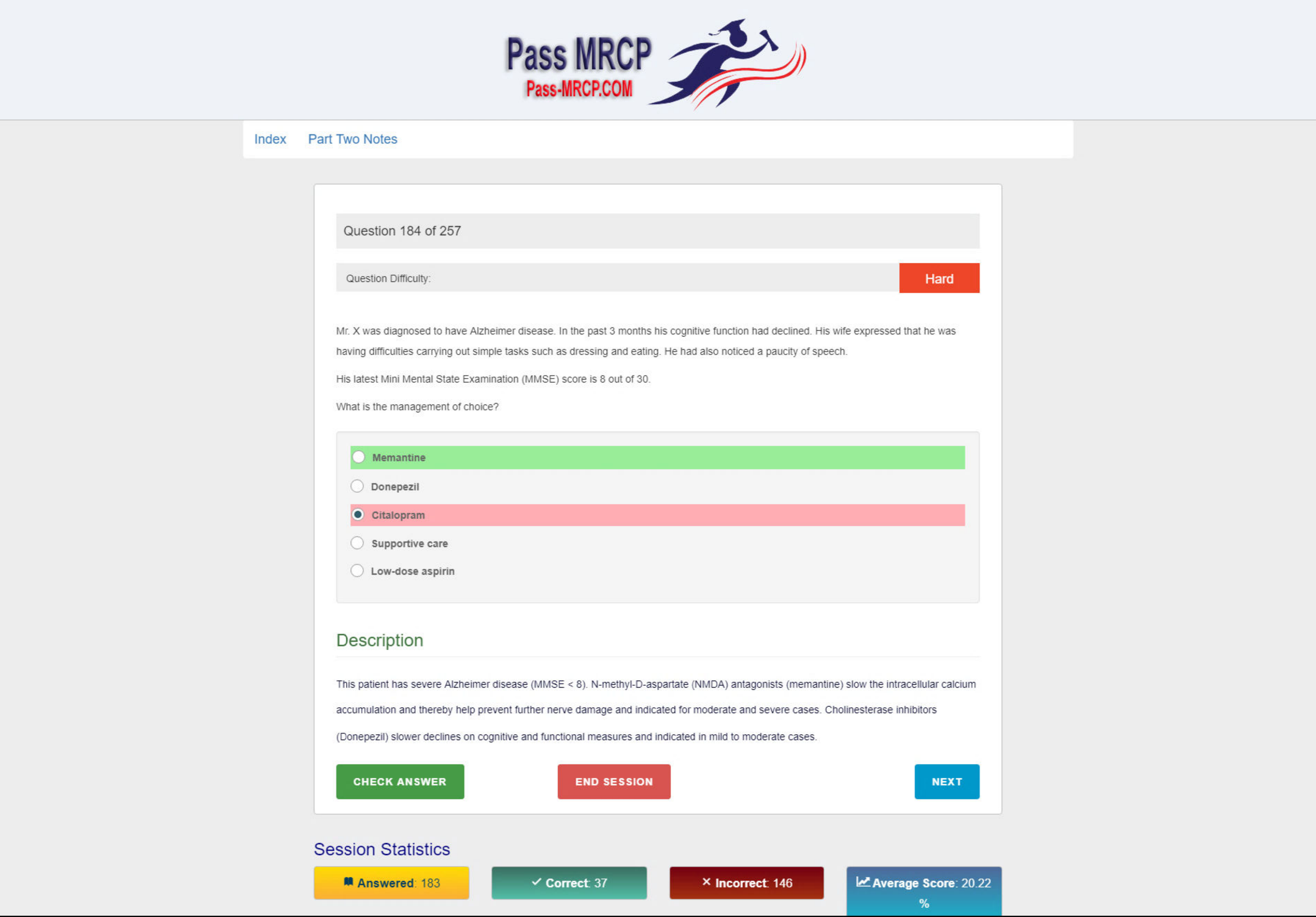
Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo (32% of peripheral vertigo cases). It is manifested by:

- Vertigo: spinning sensation caused by changes in the head position (tilting the head, rolling over in bed, looking up or under, sudden head motion and post head injury)
- Short duration (lasts only seconds to minutes)
- Nausea but not vomiting
- Visual disturbance due to associated nystagmus

Repositioning maneuvers (Epley maneuver, Semont maneuver) aare the management of choice. Anti-vertigo medications as anti-histaminics (meclizine) and anti-cholinergics (scopolamine) are used if above maneuvers fails.

Session Statistics

Answered: 182
Correct: 37
Incorrect: 145
Average Score: 20.33



Question 184 of 257

Question Difficulty: Hard

Mr. X was diagnosed to have Alzheimer disease. In the past 3 months his cognitive function had declined. His wife expressed that he was having difficulties carrying out simple tasks such as dressing and eating. He had also noticed a paucity of speech.

His latest Mini Mental State Examination (MMSE) score is 8 out of 30.

What is the management of choice?

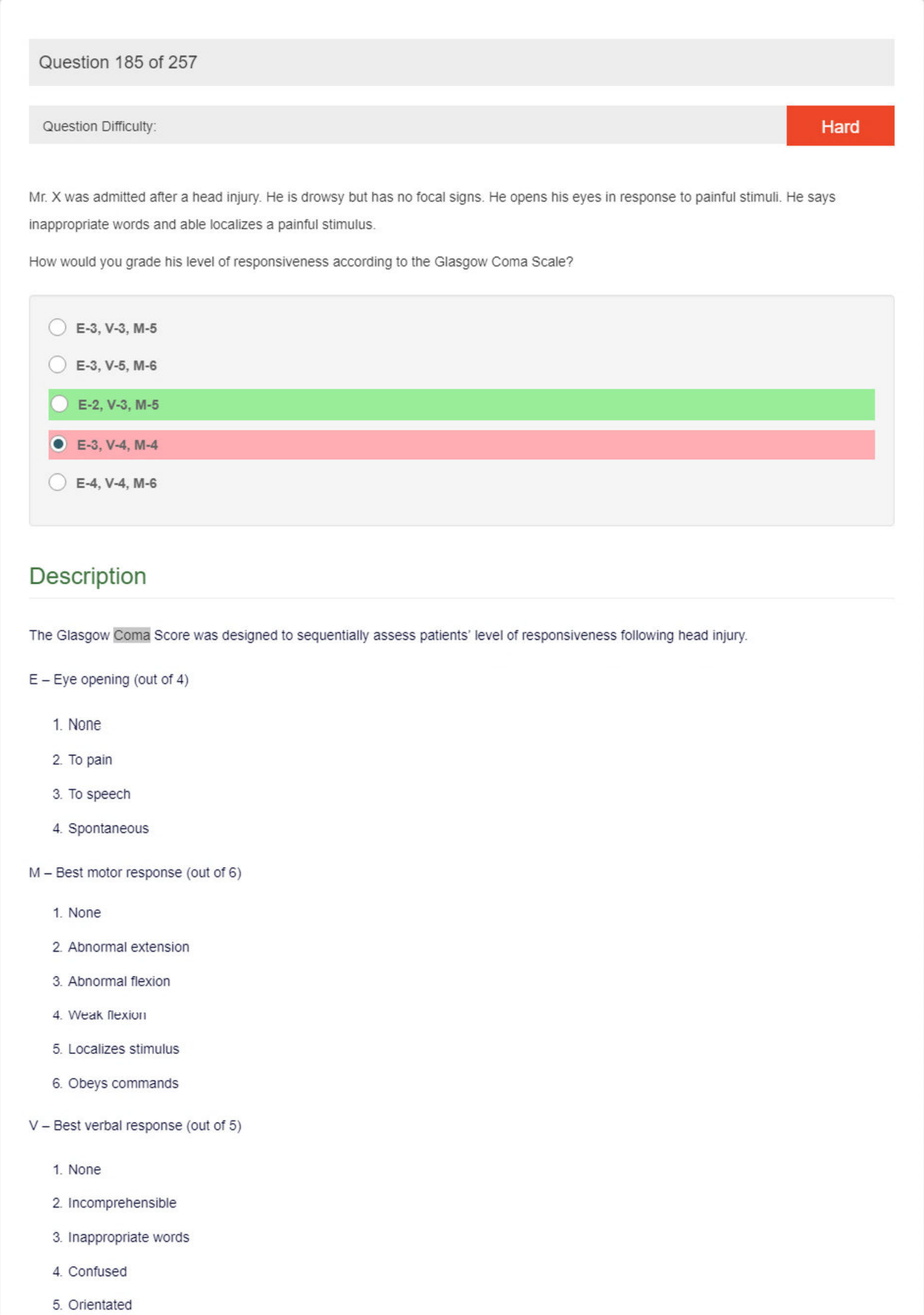
- ○ Memantine
- ○ Donepezil
- ● Citalopram
- ○ Supportive care
- ○ Low-dose aspirin

Description

This patient has severe Alzheimer disease (MMSE < 8). N-methyl-D-aspartate (NMDA) antagonists (memantine) slow the intracellular calcium accumulation and thereby help prevent further nerve damage and indicated for moderate and severe cases. Cholinesterase inhibitors (Donepezil) slower declines on cognitive and functional measures and indicated in mild to moderate cases.

Session Statistics

Answered: 183
✓ Correct: 37
✕ Incorrect: 146
Average Score: 20.22 %



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Mr. X was admitted after a head injury. He is drowsy but has no focal signs. He opens his eyes in response to painful stimuli. He says inappropriate words and able localizes a painful stimulus.

How would you grade his level of responsiveness according to the Glasgow Coma Scale?

- ○ E-3, V-3, M-5
- ○ E-3, V-5, M-6
- ○ E-2, V-3, M-5
- ● E-3, V-4, M-4
- ○ E-4, V-4, M-6

Description

The Glasgow Coma Score was designed to sequentially assess patients' level of responsiveness following head injury.

E – Eye opening (out of 4)

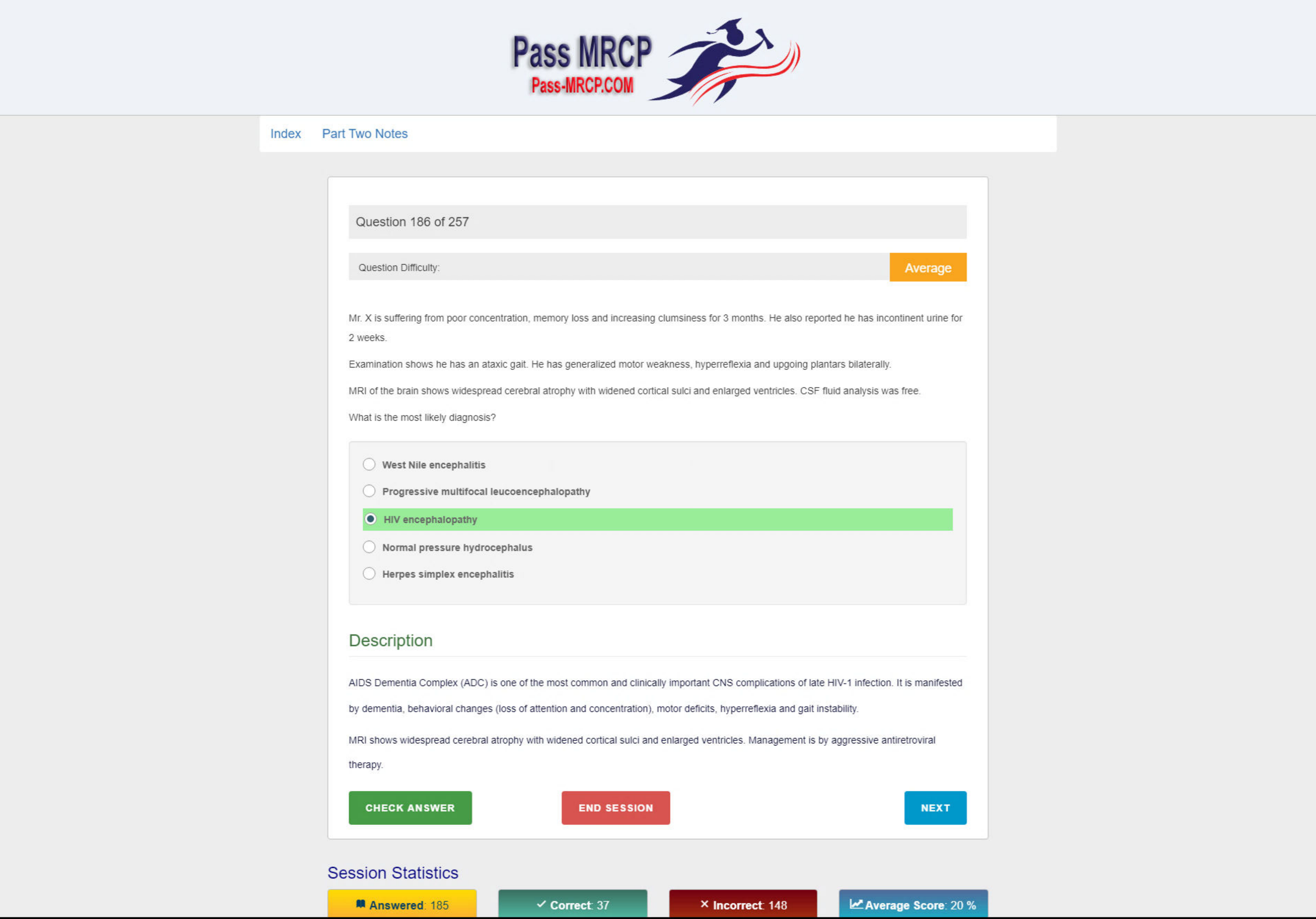
1. None
2. To pain
3. To speech
4. Spontaneous

M – Best motor response (out of 6)

1. None
2. Abnormal extension
3. Abnormal flexion
4. Weak flexion
5. Localizes stimulus
6. Obeys commands

V – Best verbal response (out of 5)

1. None
2. Incomprehensible
3. Inappropriate words
4. Confused
5. Orientated



Question 186 of 257

Question Difficulty: Average

Mr. X is suffering from poor concentration, memory loss and increasing clumsiness for 3 months. He also reported he has incontinent urine for 2 weeks.

Examination shows he has an ataxic gait. He has generalized motor weakness, hyperreflexia and upgoing plantars bilaterally.

MRI of the brain shows widespread cerebral atrophy with widened cortical sulci and enlarged ventricles. CSF fluid analysis was free.

What is the most likely diagnosis?

○ **West Nile encephalitis**
○ **Progressive multifocal leucoencephalopathy**
● **HIV encephalopathy**
○ **Normal pressure hydrocephalus**
○ **Herpes simplex encephalitis**

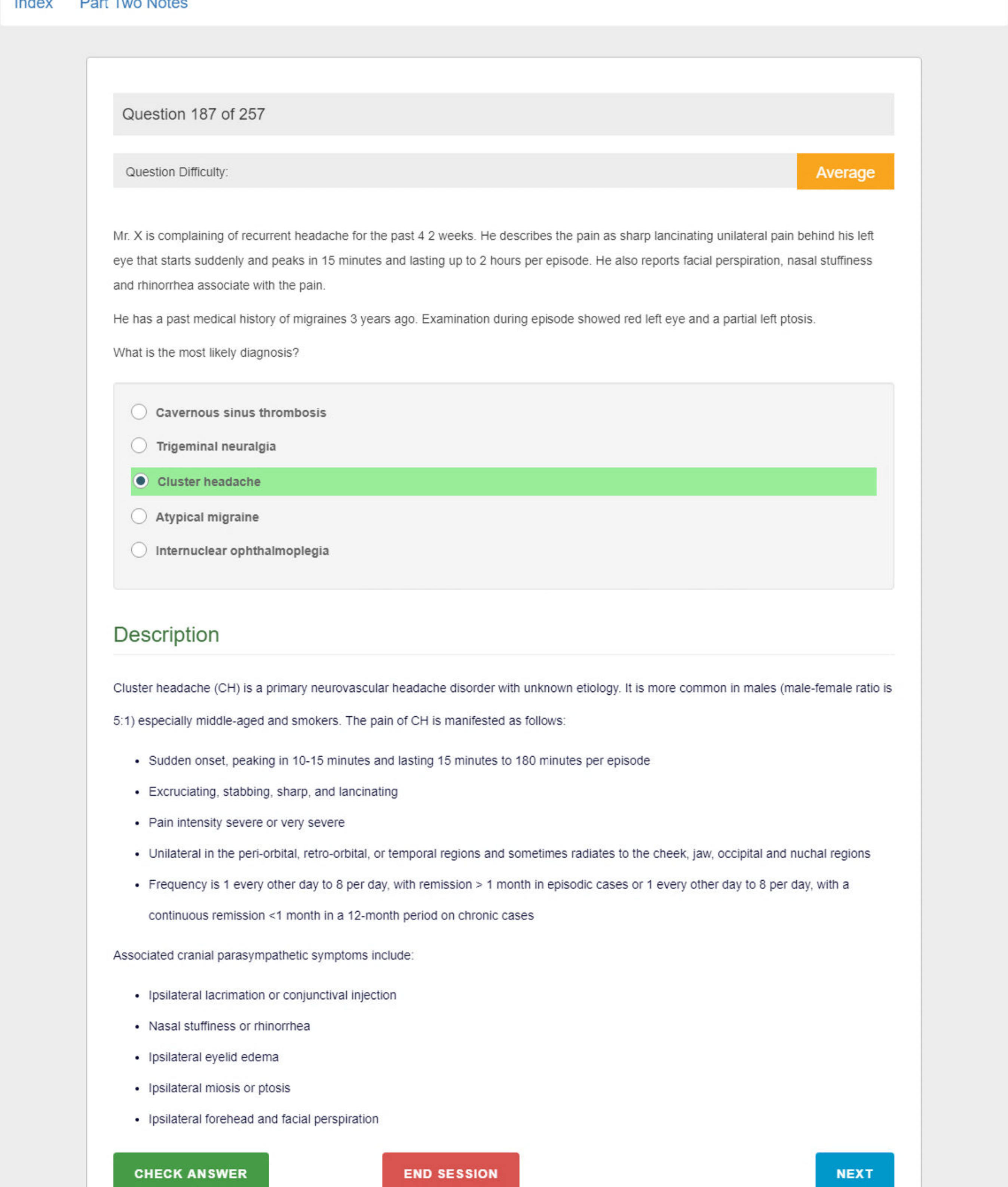
Description

AIDS Dementia Complex (ADC) is one of the most common and clinically important CNS complications of late HIV-1 infection. It is manifested by dementia, behavioral changes (loss of attention and concentration), motor deficits, hyperreflexia and gait instability.

MRI shows widespread cerebral atrophy with widened cortical sulci and enlarged ventricles. Management is by aggressive antiretroviral therapy.

Session Statistics

Answered: 185
Correct: 37
Incorrect: 148
Average Score: 20 %



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Question Difficulty: **Average**

Mr. X is complaining of recurrent headache for the past 4 2 weeks. He describes the pain as sharp lancinating unilateral pain behind his left eye that starts suddenly and peaks in 15 minutes and lasting up to 2 hours per episode. He also reports facial perspiration, nasal stuffiness and rhinorrhea associate with the pain.

He has a past medical history of migraines 3 years ago. Examination during episode showed red left eye and a partial left ptosis.

What is the most likely diagnosis?

○ **Cavernous sinus thrombosis**
○ **Trigeminal neuralgia**
● **Cluster headache**
○ **Atypical migraine**
○ **Internuclear ophthalmoplegia**

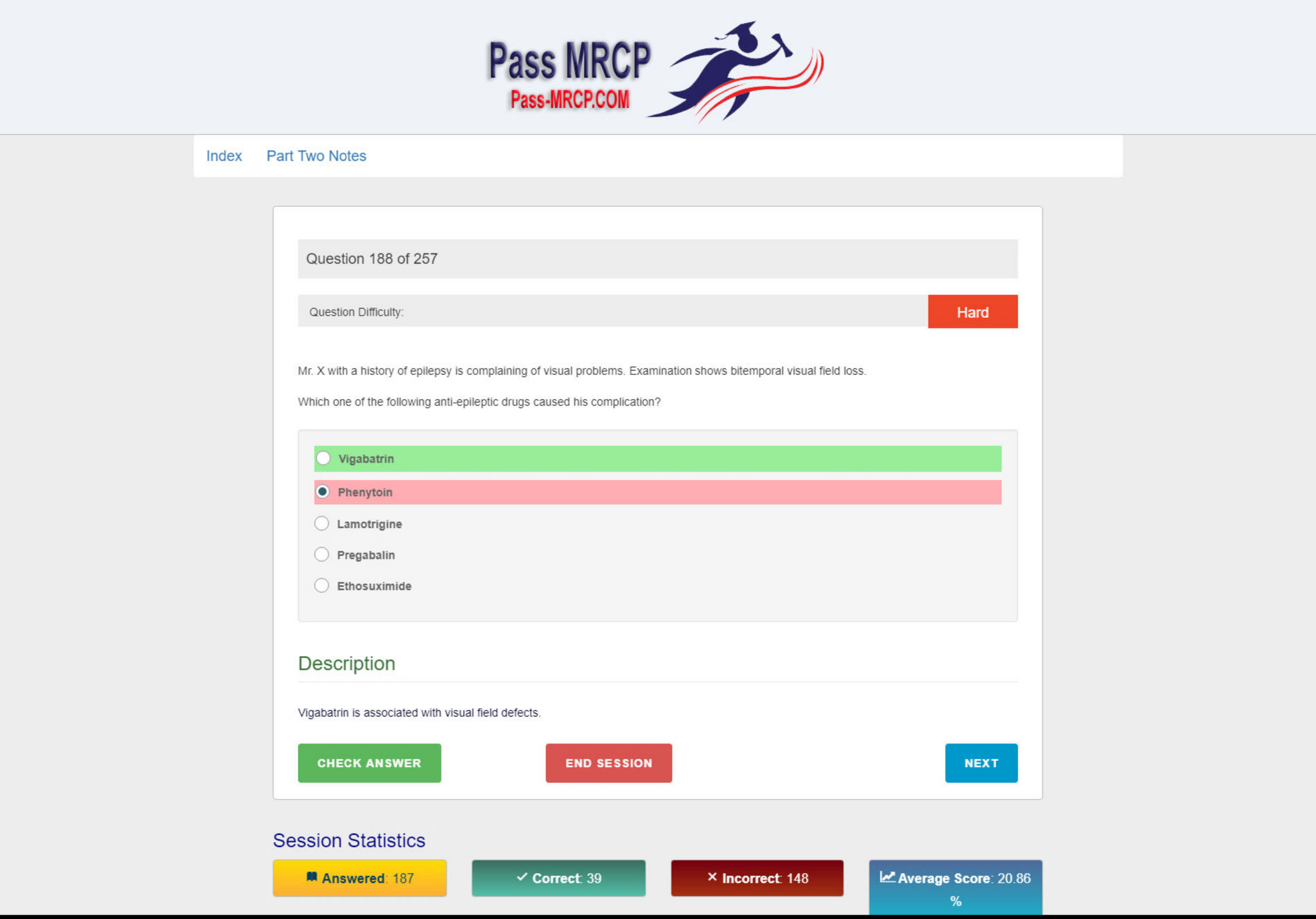
Description

Cluster headache (CH) is a primary neurovascular headache disorder with unknown etiology. It is more common in males (male-female ratio is 5:1) especially middle-aged and smokers. The pain of CH is manifested as follows:

- Sudden onset, peaking in 10-15 minutes and lasting 15 minutes to 180 minutes per episode
- Excruciating, stabbing, sharp, and lancinating
- Pain intensity severe or very severe
- Unilateral in the peri-orbital, retro-orbital, or temporal regions and sometimes radiates to the cheek, jaw, occipital and nuchal regions
- Frequency is 1 every other day to 8 per day, with remission > 1 month in episodic cases or 1 every other day to 8 per day, with a continuous remission <1 month in a 12-month period on chronic cases

Associated cranial parasympathetic symptoms include:

- Ipsilateral lacrimation or conjunctival injection
- Nasal stuffiness or rhinorrhea
- Ipsilateral eyelid edema
- Ipsilateral miosis or ptosis
- Ipsilateral forehead and facial perspiration



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Part Two Notes

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Question Difficulty: Hard

Mr. X with a history of epilepsy is complaining of visual problems. Examination shows bitemporal visual field loss.

Which one of the following anti-epileptic drugs caused his complication?

- ○ Vigabatrin
- ● Phenytoin
- ○ Lamotrigine
- ○ Pregabalin
- ○ Ethosuximide

Description

Vigabatrin is associated with visual field defects.

CHECK ANSWER
END SESSION
NEXT

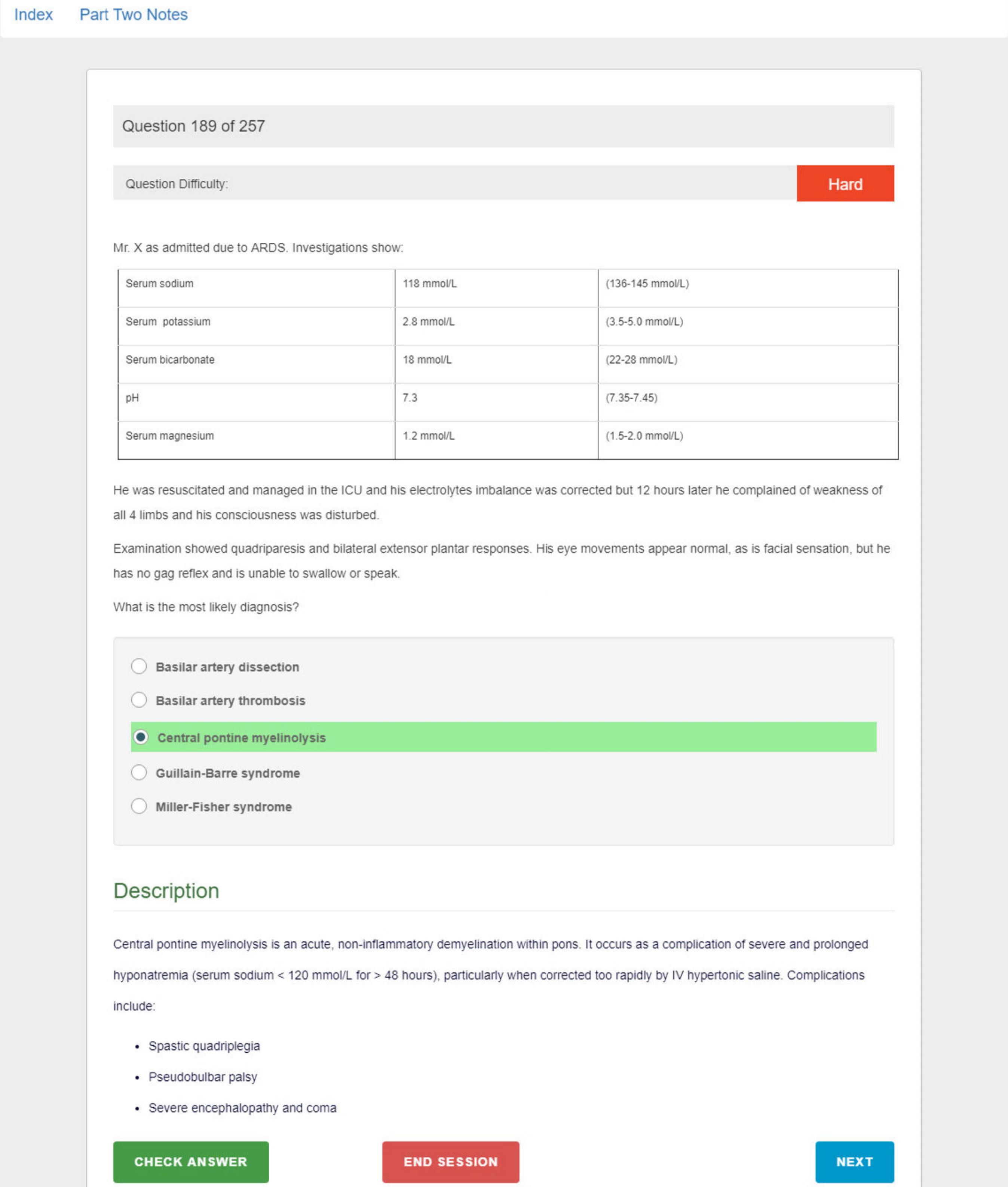
Session Statistics

Answered: 187

✓ Correct: 39

× Incorrect: 148

Average Score: 20.86 %



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Question Difficulty: **Hard**

Mr. X as admitted due to ARDS. Investigations show:

Serum sodium	118 mmol/L	(136-145 mmol/L)
Serum potassium	2.8 mmol/L	(3.5-5.0 mmol/L)
Serum bicarbonate	18 mmol/L	(22-28 mmol/L)
pH	7.3	(7.35-7.45)
Serum magnesium	1.2 mmol/L	(1.5-2.0 mmol/L)

He was resuscitated and managed in the ICU and his electrolytes imbalance was corrected but 12 hours later he complained of weakness of all 4 limbs and his consciousness was disturbed.

Examination showed quadriparesis and bilateral extensor plantar responses. His eye movements appear normal, as is facial sensation, but he has no gag reflex and is unable to swallow or speak.

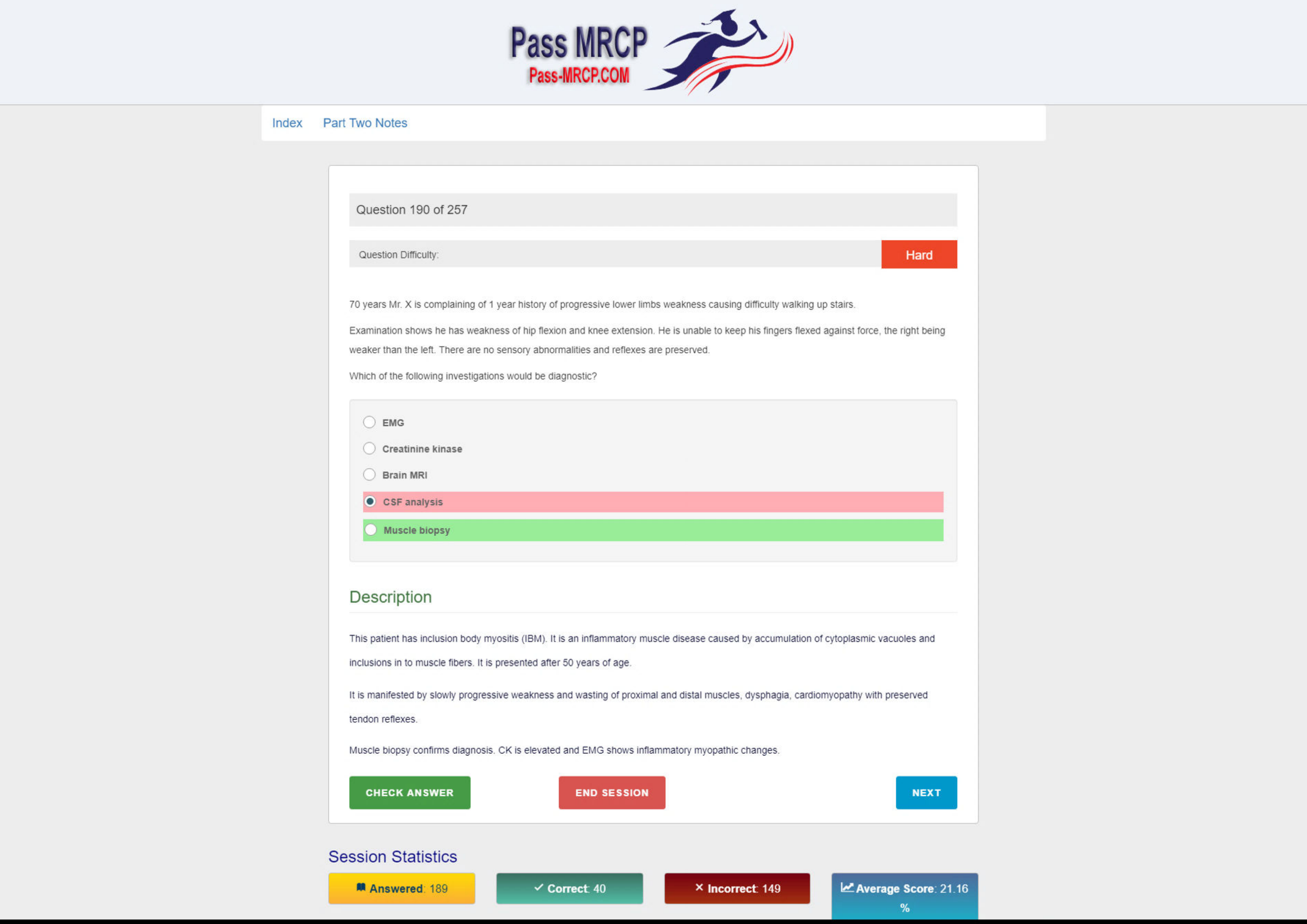
What is the most likely diagnosis?

○ **Basilar artery dissection**
○ **Basilar artery thrombosis**
● **Central pontine myelinolysis**
○ **Guillain-Barre syndrome**
○ **Miller-Fisher syndrome**

Description

Central pontine myelinolysis is an acute, non-inflammatory demyelination within pons. It occurs as a complication of severe and prolonged hyponatremia (serum sodium < 120 mmol/L for > 48 hours), particularly when corrected too rapidly by IV hypertonic saline. Complications include:

- Spastic quadriplegia
- Pseudobulbar palsy
- Severe encephalopathy and coma



Question 190 of 257

Question Difficulty: Hard

70 years Mr. X is complaining of 1 year history of progressive lower limbs weakness causing difficulty walking up stairs.

Examination shows he has weakness of hip flexion and knee extension. He is unable to keep his fingers flexed against force, the right being weaker than the left. There are no sensory abnormalities and reflexes are preserved.

Which of the following investigations would be diagnostic?

- ○ EMG
- ○ Creatinine kinase
- ○ Brain MRI
- ● CSF analysis
- ○ Muscle biopsy

Description

This patient has inclusion body myositis (IBM). It is an inflammatory muscle disease caused by accumulation of cytoplasmic vacuoles and inclusions in to muscle fibers. It is presented after 50 years of age.

It is manifested by slowly progressive weakness and wasting of proximal and distal muscles, dysphagia, cardiomyopathy with preserved tendon reflexes.

Muscle biopsy confirms diagnosis. CK is elevated and EMG shows inflammatory myopathic changes.

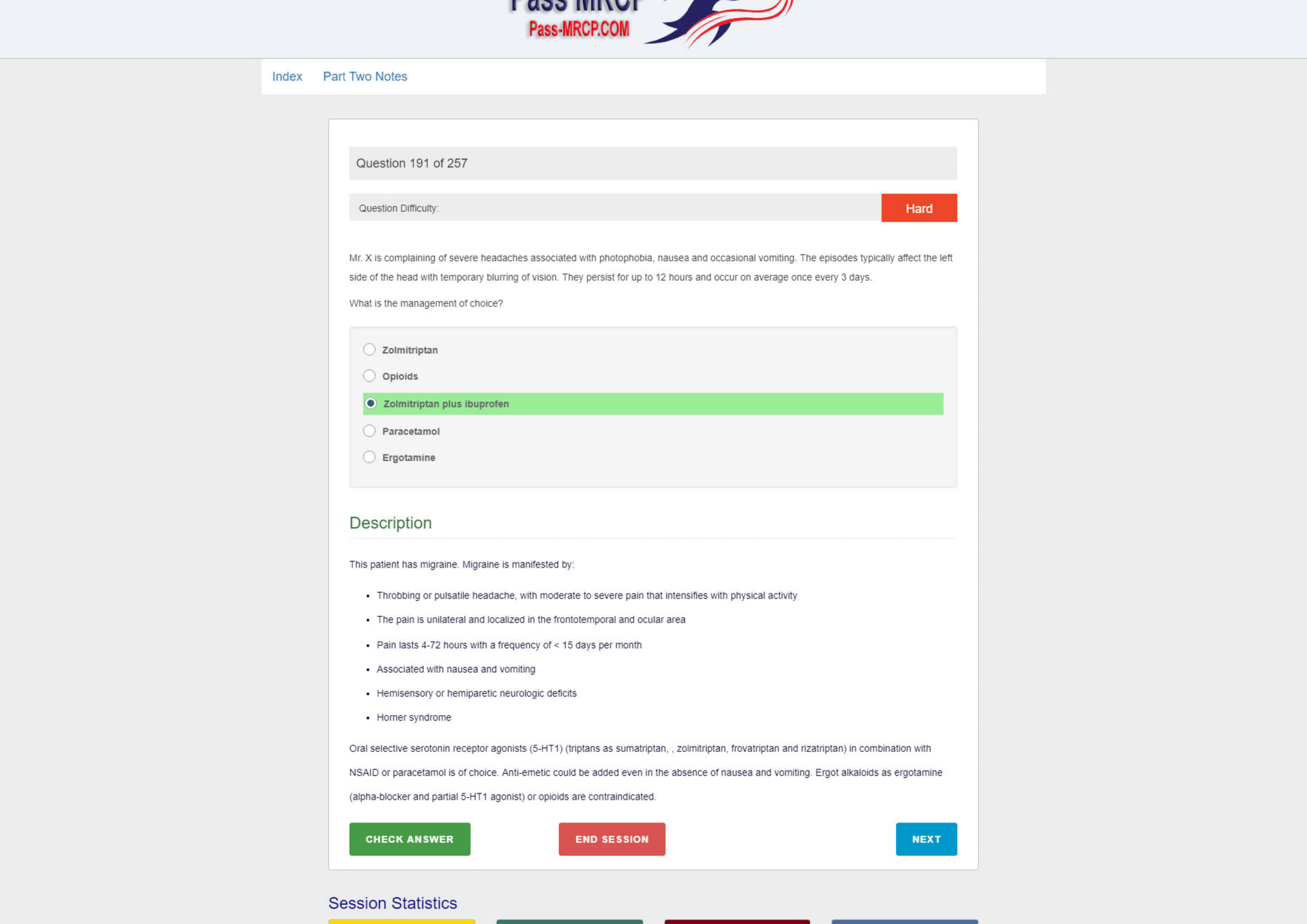
Session Statistics

Answered: 189

✓ Correct: 40

✕ Incorrect: 149

Average Score: 21.16 %



Question 191 of 257

Question Difficulty: Hard

Mr. X is complaining of severe headaches associated with photophobia, nausea and occasional vomiting. The episodes typically affect the left side of the head with temporary blurring of vision. They persist for up to 12 hours and occur on average once every 3 days.

What is the management of choice?

○ **Zolmitriptan**
○ **Opioids**
● **Zolmitriptan plus ibuprofen**
○ **Paracetamol**
○ **Ergotamine**

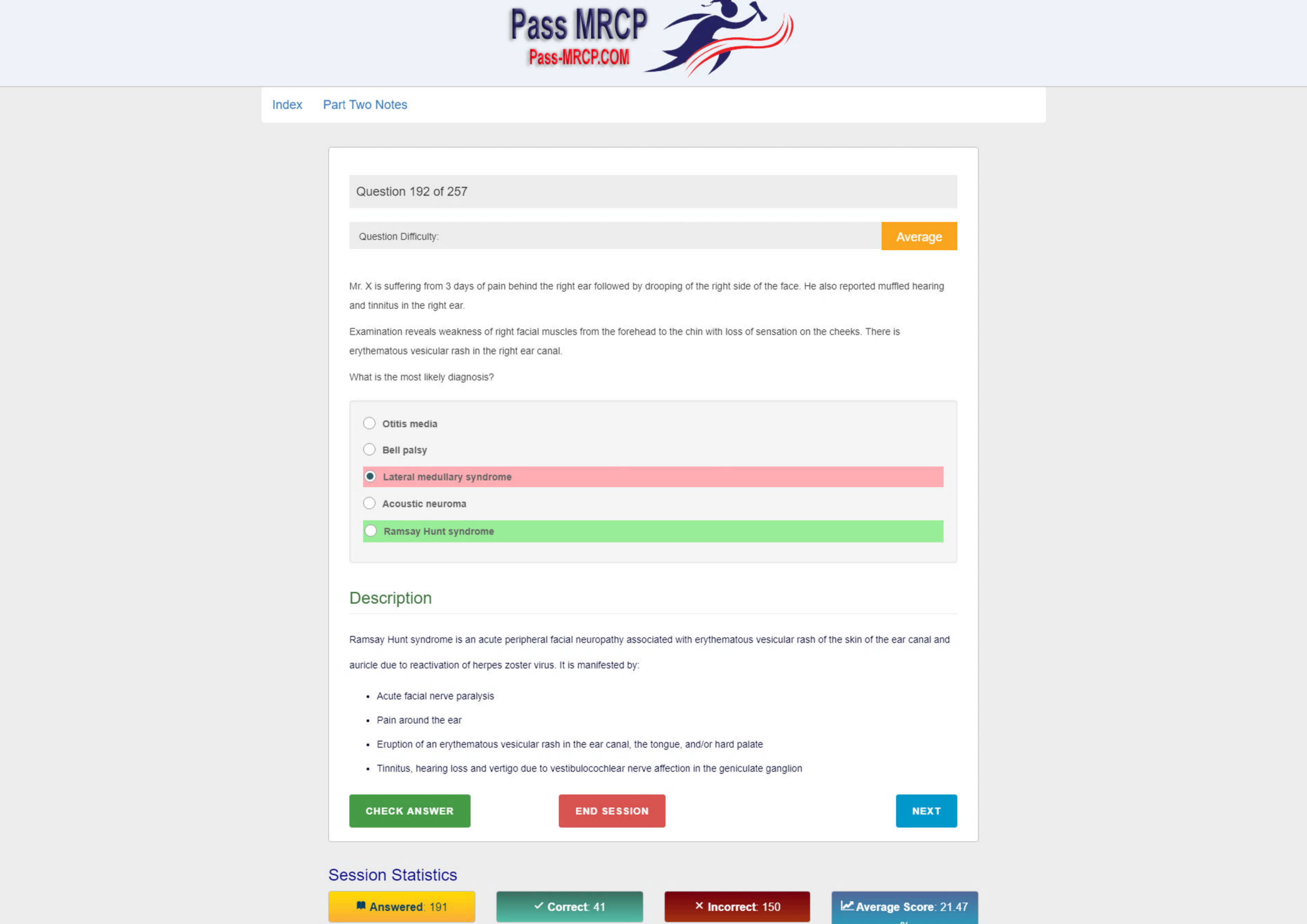
Description

This patient has migraine. Migraine is manifested by:

- Throbbing or pulsatile headache, with moderate to severe pain that intensifies with physical activity
- The pain is unilateral and localized in the frontotemporal and ocular area
- Pain lasts 4-72 hours with a frequency of < 15 days per month
- Associated with nausea and vomiting
- Hemisensory or hemiparetic neurologic deficits
- Horner syndrome

Oral selective serotonin receptor agonists (5-HT1) (triptans as sumatriptan, , zolmitriptan, frovatriptan and rizatriptan) in combination with NSAID or paracetamol is of choice. Anti-emetic could be added even in the absence of nausea and vomiting. Ergot alkaloids as ergotamine (alpha-blocker and partial 5-HT1 agonist) or opioids are contraindicated.

Session Statistics



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Question Difficulty: Average

Mr. X is suffering from 3 days of pain behind the right ear followed by drooping of the right side of the face. He also reported muffled hearing and tinnitus in the right ear.

Examination reveals weakness of right facial muscles from the forehead to the chin with loss of sensation on the cheeks. There is erythematous vesicular rash in the right ear canal.

What is the most likely diagnosis?

○ **Otitis media**
○ **Bell palsy**
● **Lateral medullary syndrome**
○ **Acoustic neuroma**
○ **Ramsay Hunt syndrome**

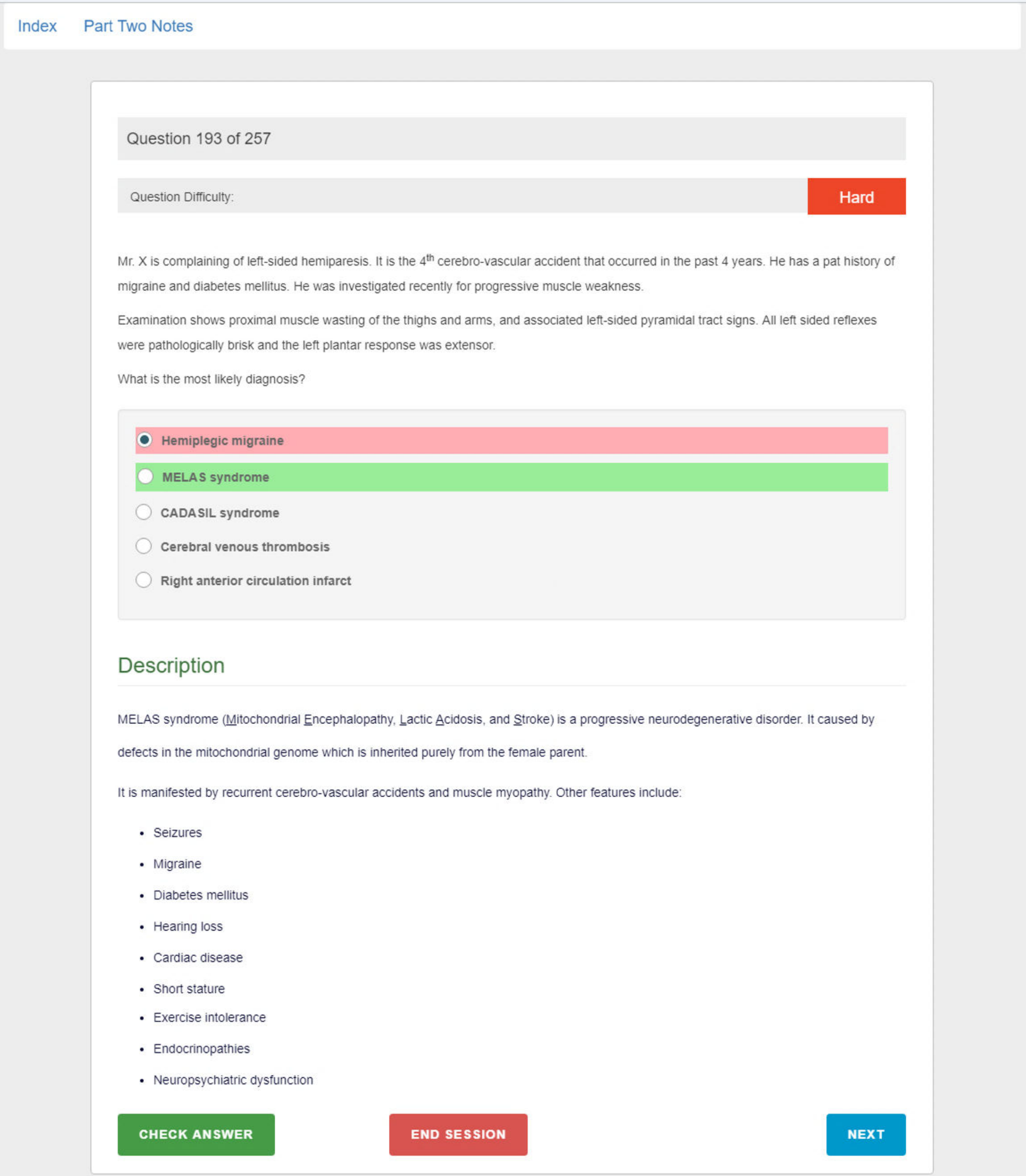
Description

Ramsay Hunt syndrome is an acute peripheral facial neuropathy associated with erythematous vesicular rash of the skin of the ear canal and auricle due to reactivation of herpes zoster virus. It is manifested by:

- Acute facial nerve paralysis
- Pain around the ear
- Eruption of an erythematous vesicular rash in the ear canal, the tongue, and/or hard palate
- Tinnitus, hearing loss and vertigo due to vestibulocochlear nerve affection in the geniculate ganglion

Session Statistics

Answered: 191
✓ **Correct**: 41
✕ **Incorrect**: 150
Average Score: 21.47



Question 193 of 257

Question Difficulty: Hard

Mr. X is complaining of left-sided hemiparesis. It is the 4th cerebro-vascular accident that occurred in the past 4 years. He has a pat history of migraine and diabetes mellitus. He was investigated recently for progressive muscle weakness.

Examination shows proximal muscle wasting of the thighs and arms, and associated left-sided pyramidal tract signs. All left sided reflexes were pathologically brisk and the left plantar response was extensor.

What is the most likely diagnosis?

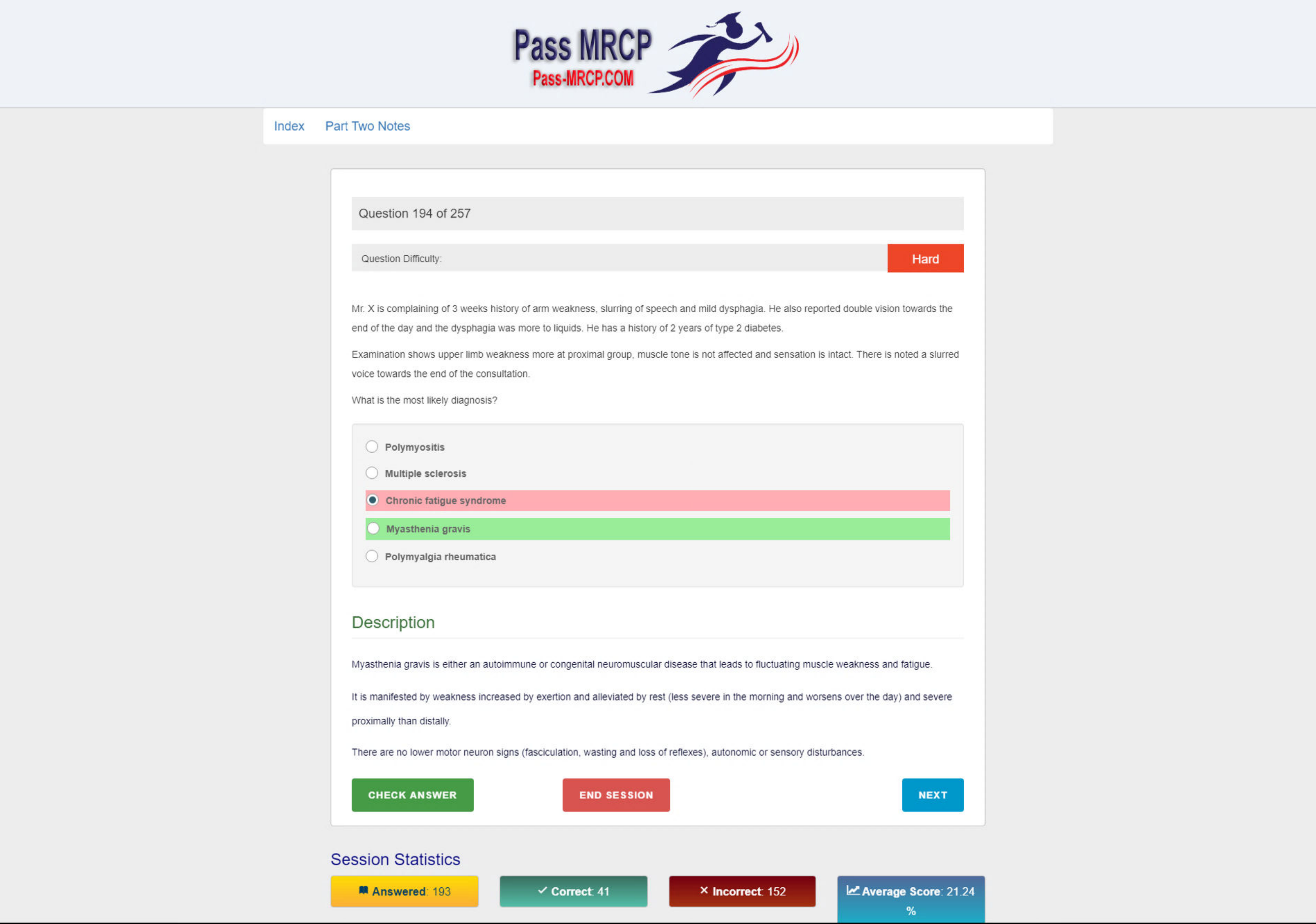
● **Hemiplegic migraine**
○ **MELAS syndrome**
○ **CADASIL syndrome**
○ **Cerebral venous thrombosis**
○ **Right anterior circulation infarct**

Description

MELAS syndrome (Mitochondrial Encephalopathy, Lactic Acidosis, and Stroke) is a progressive neurodegenerative disorder. It caused by defects in the mitochondrial genome which is inherited purely from the female parent.

It is manifested by recurrent cerebro-vascular accidents and muscle myopathy. Other features include:

- Seizures
- Migraine
- Diabetes mellitus
- Hearing loss
- Cardiac disease
- Short stature
- Exercise intolerance
- Endocrinopathies
- Neuropsychiatric dysfunction



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Question Difficulty: Hard

Mr. X is complaining of 3 weeks history of arm weakness, slurring of speech and mild dysphagia. He also reported double vision towards the end of the day and the dysphagia was more to liquids. He has a history of 2 years of type 2 diabetes.

Examination shows upper limb weakness more at proximal group, muscle tone is not affected and sensation is intact. There is noted a slurred voice towards the end of the consultation.

What is the most likely diagnosis?

- ○ Polymyositis
- ○ Multiple sclerosis
- ● Chronic fatigue syndrome
- ○ Myasthenia gravis
- ○ Polymyalgia rheumatica

Description

Myasthenia gravis is either an autoimmune or congenital neuromuscular disease that leads to fluctuating muscle weakness and fatigue.

It is manifested by weakness increased by exertion and alleviated by rest (less severe in the morning and worsens over the day) and severe proximally than distally.

There are no lower motor neuron signs (fasciculation, wasting and loss of reflexes), autonomic or sensory disturbances.

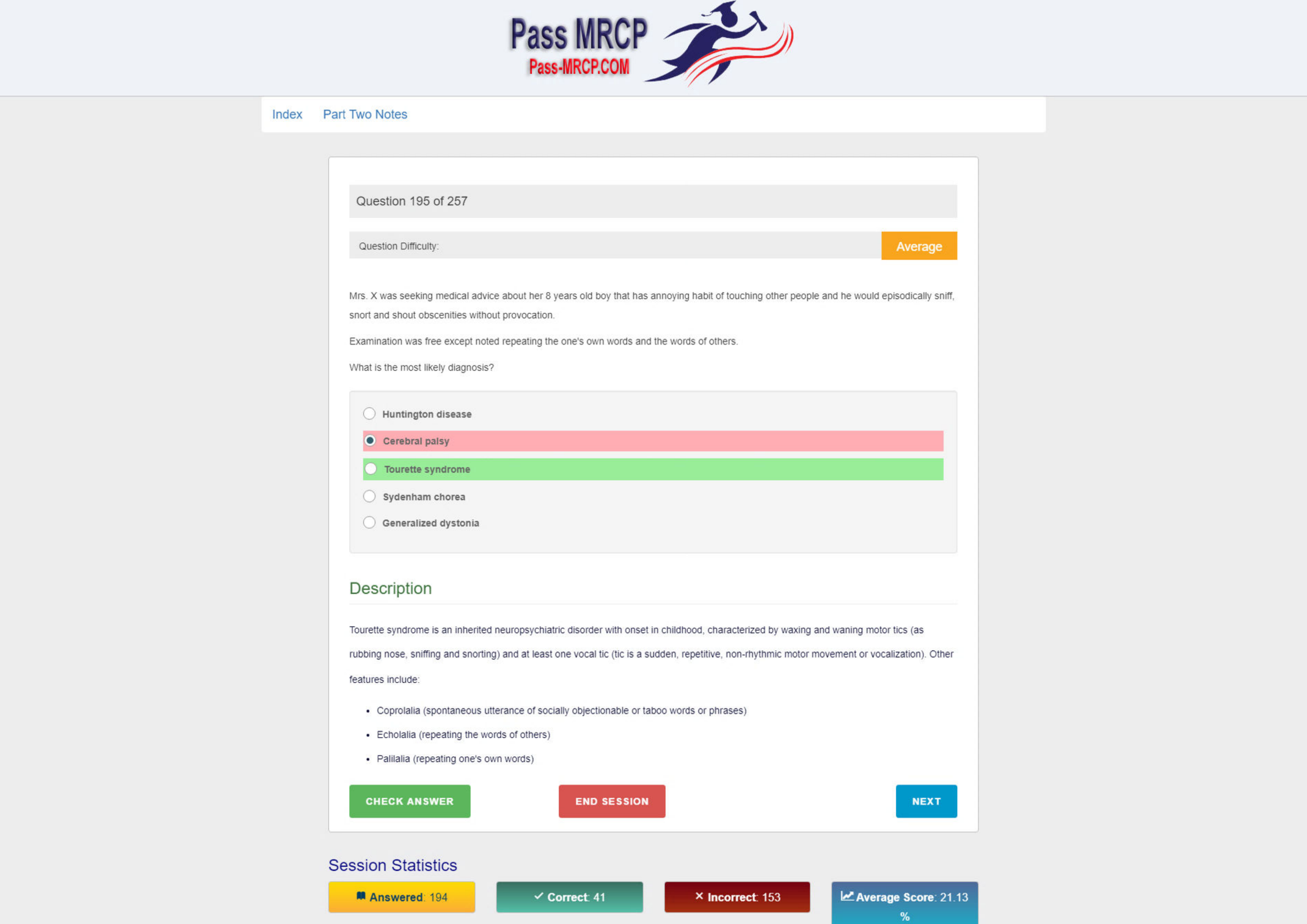
Session Statistics

Answered: 193

Correct: 41

Incorrect: 152

Average Score: 21.24 %



Question 195 of 257

Question Difficulty: Average

Mrs. X was seeking medical advice about her 8 years old boy that has annoying habit of touching other people and he would episodically sniff, snort and shout obscenities without provocation.

Examination was free except noted repeating the one's own words and the words of others.

What is the most likely diagnosis?

○ **Huntington disease**

● **Cerebral palsy**

○ **Tourette syndrome**

○ **Sydenham chorea**

○ **Generalized dystonia**

Description

Tourette syndrome is an inherited neuropsychiatric disorder with onset in childhood, characterized by waxing and waning motor tics (as rubbing nose, sniffing and snorting) and at least one vocal tic (tic is a sudden, repetitive, non-rhythmic motor movement or vocalization). Other features include:

- Coprolalia (spontaneous utterance of socially objectionable or taboo words or phrases)
- Echolalia (repeating the words of others)
- Palilalia (repeating one's own words)

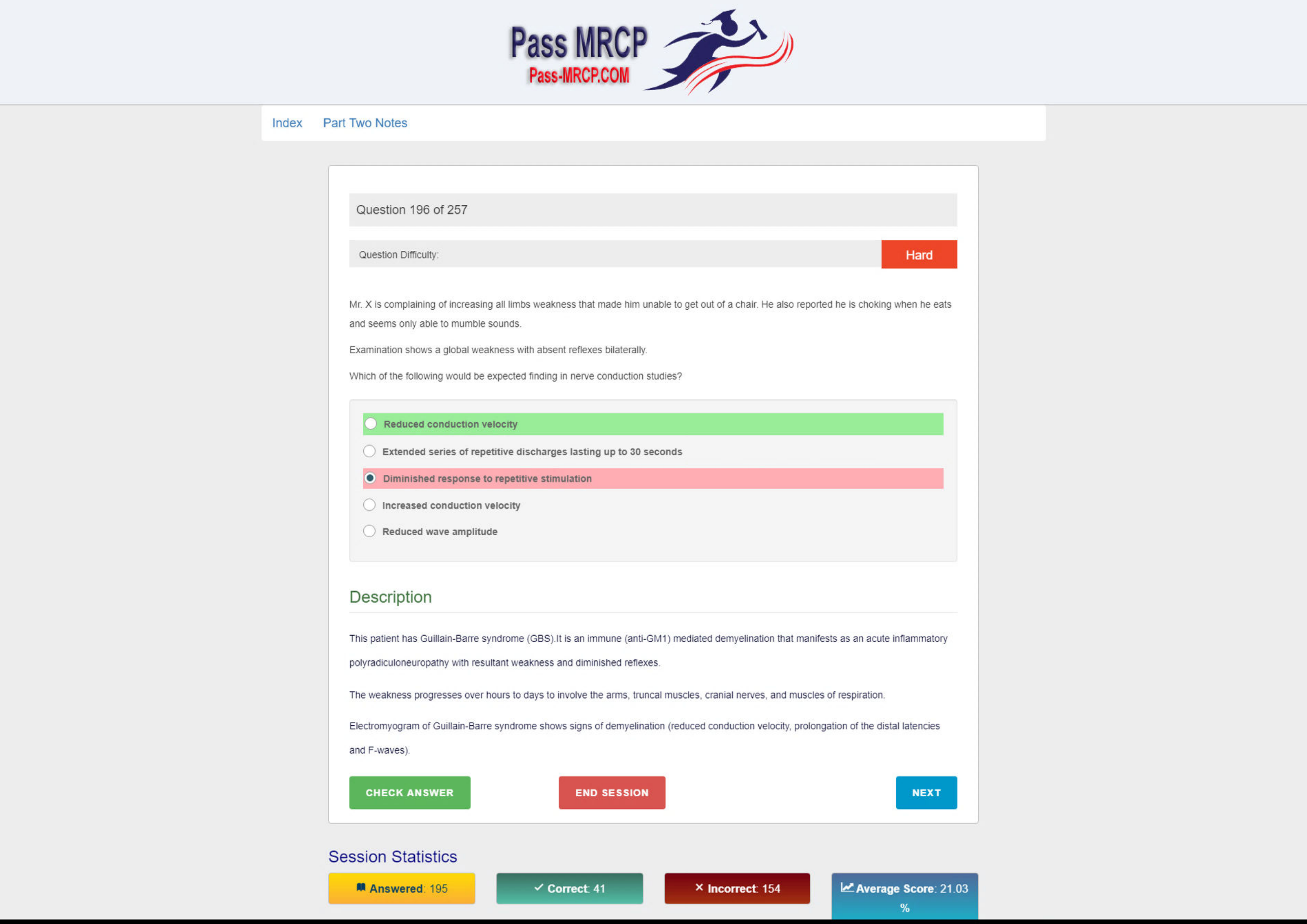
Session Statistics

Answered: 194

✓ **Correct**: 41

✕ **Incorrect**: 153

Average Score: 21.13 %



Question 196 of 257

Question Difficulty: Hard

Mr. X is complaining of increasing all limbs weakness that made him unable to get out of a chair. He also reported he is choking when he eats and seems only able to mumble sounds.

Examination shows a global weakness with absent reflexes bilaterally.

Which of the following would be expected finding in nerve conduction studies?

- ○ **Reduced conduction velocity**
- ○ **Extended series of repetitive discharges lasting up to 30 seconds**
- ● **Diminished response to repetitive stimulation**
- ○ **Increased conduction velocity**
- ○ **Reduced wave amplitude**

Description

This patient has Guillain-Barre syndrome (GBS).It is an immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

The weakness progresses over hours to days to involve the arms, truncal muscles, cranial nerves, and muscles of respiration.

Electromyogram of Guillain-Barre syndrome shows signs of demyelination (reduced conduction velocity, prolongation of the distal latencies and F-waves).

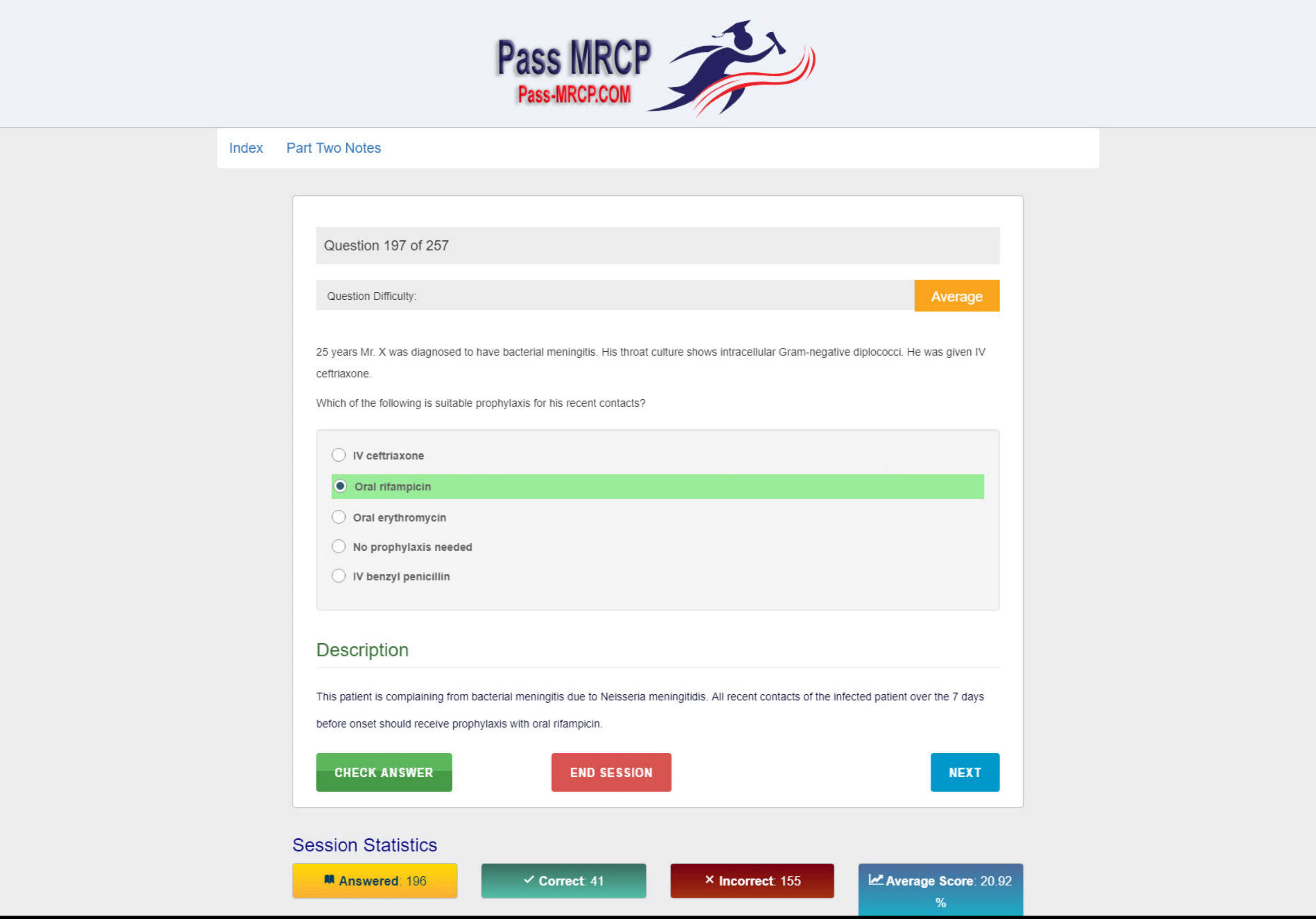
Session Statistics

Answered: 195

✓ Correct: 41

✕ Incorrect: 154

Average Score: 21.03 %



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Question Difficulty: Average

25 years Mr. X was diagnosed to have bacterial meningitis. His throat culture shows intracellular Gram-negative diplococci. He was given IV ceftriaxone.

Which of the following is suitable prophylaxis for his recent contacts?

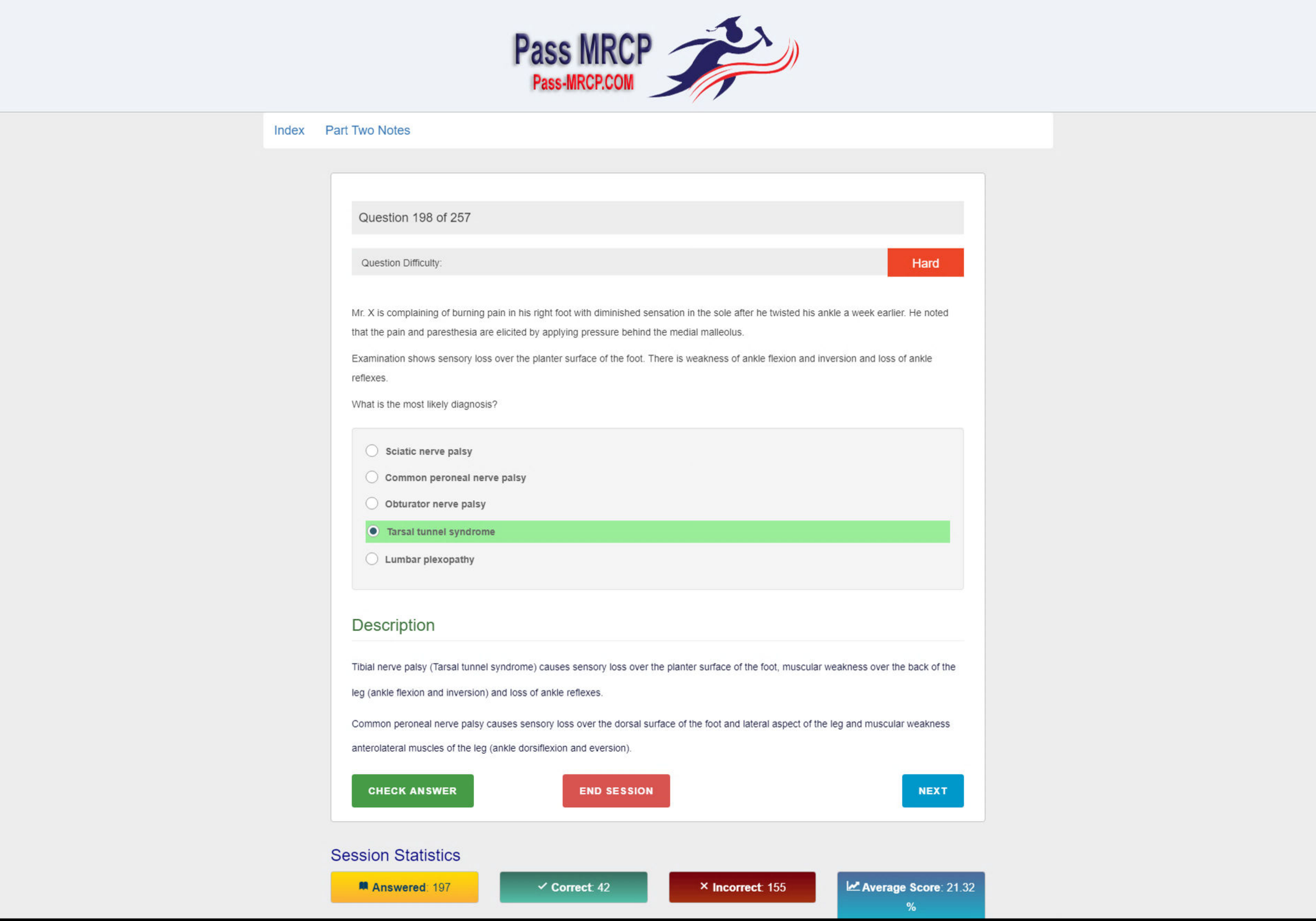
- ○ **IV ceftriaxone**
- ● **Oral rifampicin**
- ○ **Oral erythromycin**
- ○ **No prophylaxis needed**
- ○ **IV benzyl penicillin**

Description

This patient is complaining from bacterial meningitis due to Neisseria meningitidis. All recent contacts of the infected patient over the 7 days before onset should receive prophylaxis with oral rifampicin.

Session Statistics

Answered: 196
✓ **Correct**: 41
✕ **Incorrect**: 155
Average Score: 20.92 %



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Question Difficulty: Hard

Mr. X is complaining of burning pain in his right foot with diminished sensation in the sole after he twisted his ankle a week earlier. He noted that the pain and paresthesia are elicited by applying pressure behind the medial malleolus.

Examination shows sensory loss over the planter surface of the foot. There is weakness of ankle flexion and inversion and loss of ankle reflexes.

What is the most likely diagnosis?

- ○ Sciatic nerve palsy
- ○ Common peroneal nerve palsy
- ○ Obturator nerve palsy
- ● Tarsal tunnel syndrome
- ○ Lumbar plexopathy

Description

Tibial nerve palsy (Tarsal tunnel syndrome) causes sensory loss over the planter surface of the foot, muscular weakness over the back of the leg (ankle flexion and inversion) and loss of ankle reflexes.

Common peroneal nerve palsy causes sensory loss over the dorsal surface of the foot and lateral aspect of the leg and muscular weakness anterolateral muscles of the leg (ankle dorsiflexion and eversion).

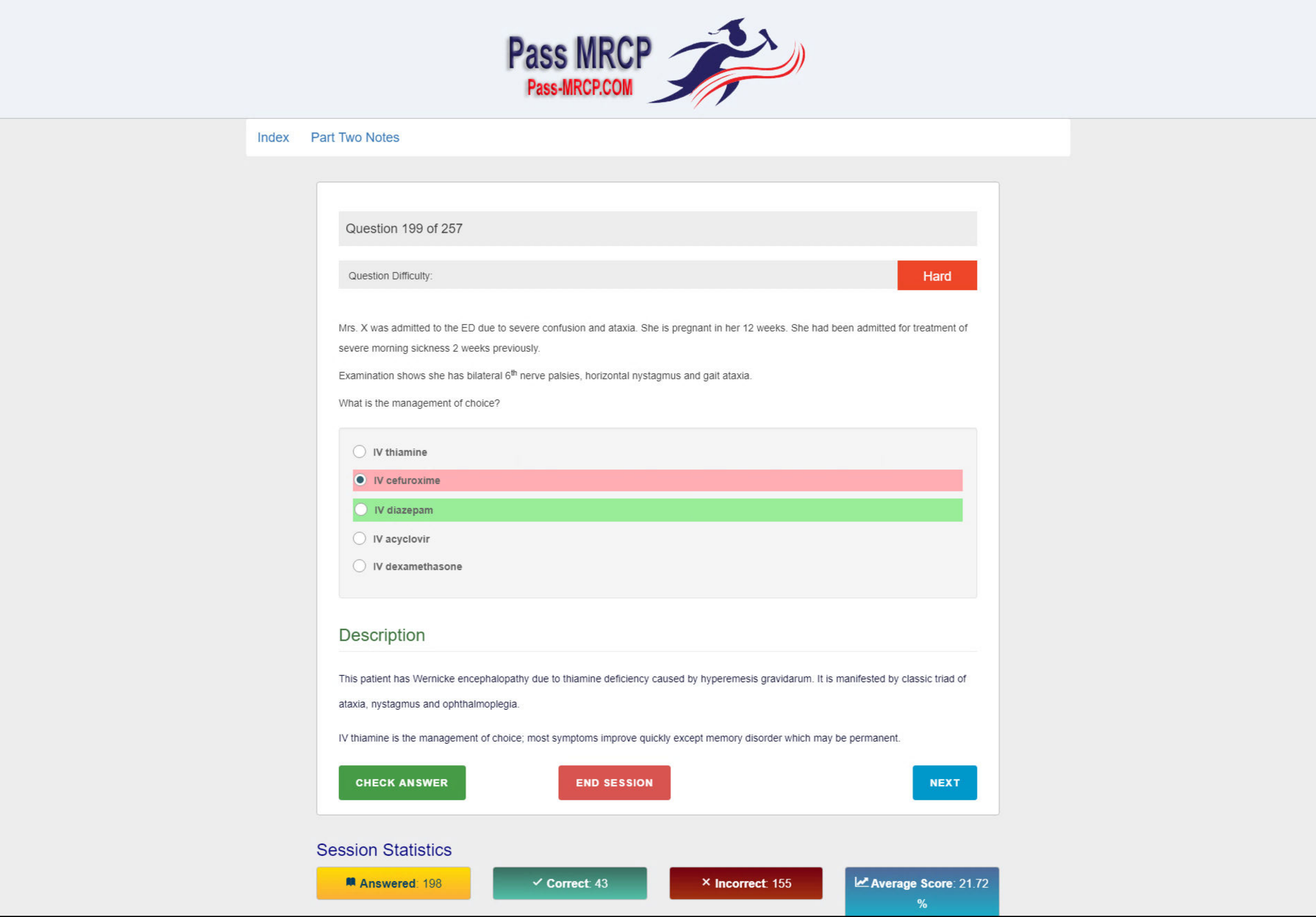
Session Statistics

Answered: 197

✓ Correct: 42

✕ Incorrect: 155

Average Score: 21.32 %



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Question Difficulty: **Hard**

Mrs. X was admitted to the ED due to severe confusion and ataxia. She is pregnant in her 12 weeks. She had been admitted for treatment of severe morning sickness 2 weeks previously.

Examination shows she has bilateral 6th nerve palsies, horizontal nystagmus and gait ataxia.

What is the management of choice?

- ○ **IV thiamine**
- ● **IV cefuroxime**
- ○ **IV diazepam**
- ○ **IV acyclovir**
- ○ **IV dexamethasone**

Description

This patient has Wernicke encephalopathy due to thiamine deficiency caused by hyperemesis gravidarum. It is manifested by classic triad of ataxia, nystagmus and ophthalmoplegia.

IV thiamine is the management of choice; most symptoms improve quickly except memory disorder which may be permanent.

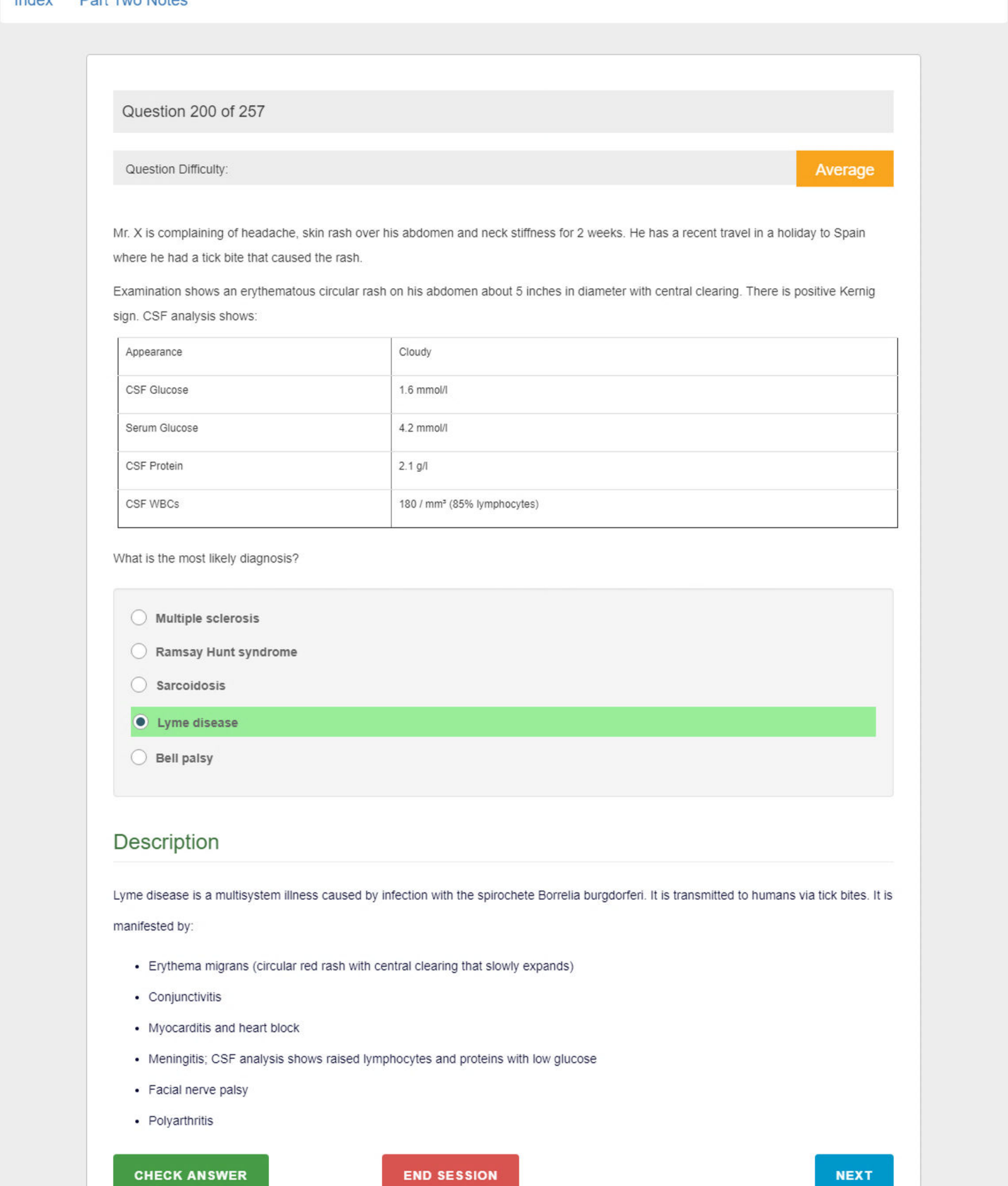
Session Statistics

Answered: 198

✓ Correct: 43

× Incorrect: 155

Average Score: 21.72 %



Question 200 of 257

Question Difficulty: **Average**

Mr. X is complaining of headache, skin rash over his abdomen and neck stiffness for 2 weeks. He has a recent travel in a holiday to Spain where he had a tick bite that caused the rash.

Examination shows an erythematous circular rash on his abdomen about 5 inches in diameter with central clearing. There is positive Kernig sign. CSF analysis shows:

Appearance	Cloudy
CSF Glucose	1.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	2.1 g/l
CSF WBCs	180 / mm^3 (85% lymphocytes)

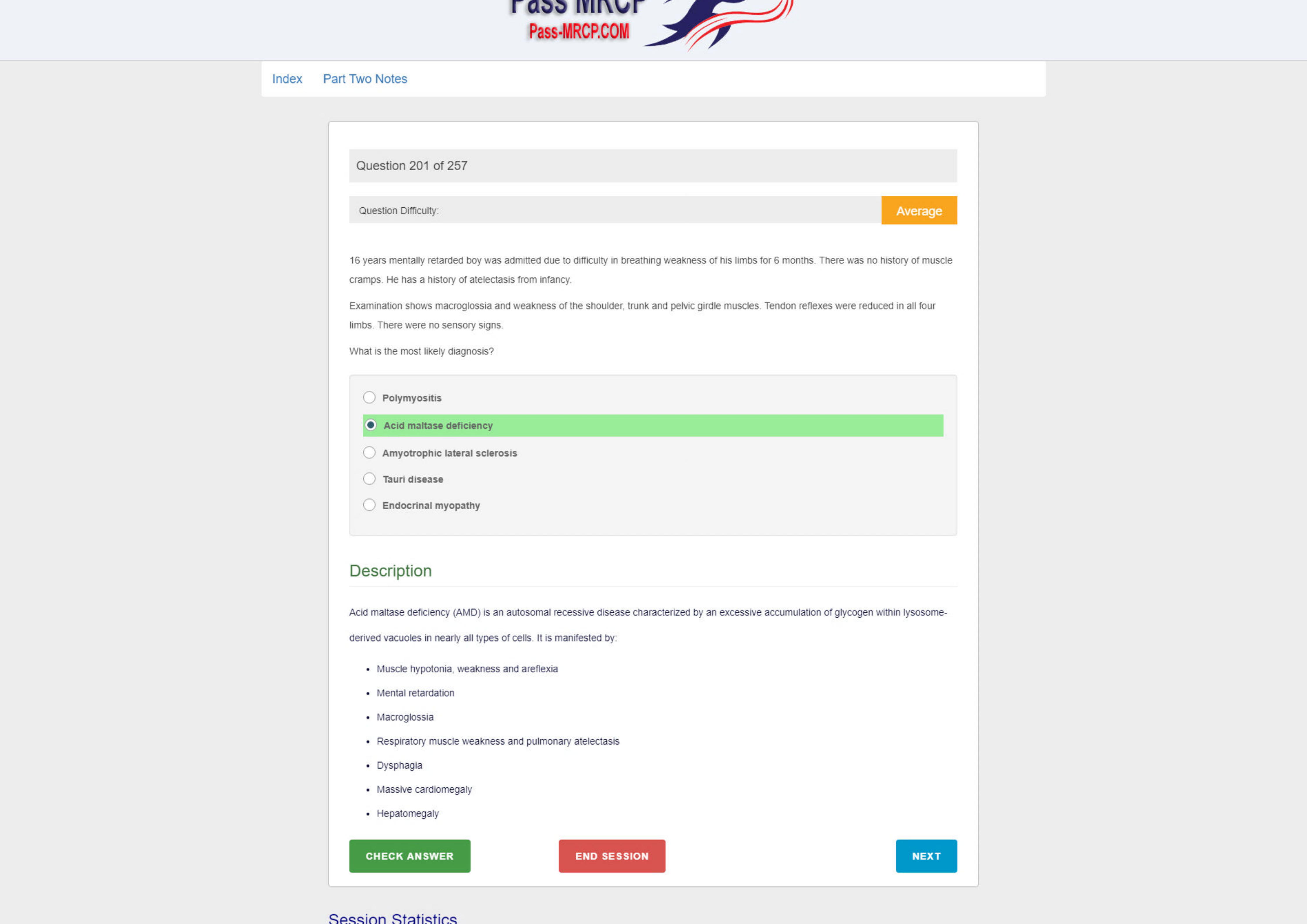
What is the most likely diagnosis?

○ **Multiple sclerosis**
○ **Ramsay Hunt syndrome**
○ **Sarcoidosis**
● **Lyme disease**
○ **Bell palsy**

Description

Lyme disease is a multisystem illness caused by infection with the spirochete Borrelia burgdorferi. It is transmitted to humans via tick bites. It is manifested by:

- Erythema migrans (circular red rash with central clearing that slowly expands)
- Conjunctivitis
- Myocarditis and heart block
- Meningitis; CSF analysis shows raised lymphocytes and proteins with low glucose
- Facial nerve palsy
- Polyarthritis



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Question Difficulty: Average

16 years mentally retarded boy was admitted due to difficulty in breathing weakness of his limbs for 6 months. There was no history of muscle cramps. He has a history of atelectasis from infancy.

Examination shows macroglossia and weakness of the shoulder, trunk and pelvic girdle muscles. Tendon reflexes were reduced in all four limbs. There were no sensory signs.

What is the most likely diagnosis?

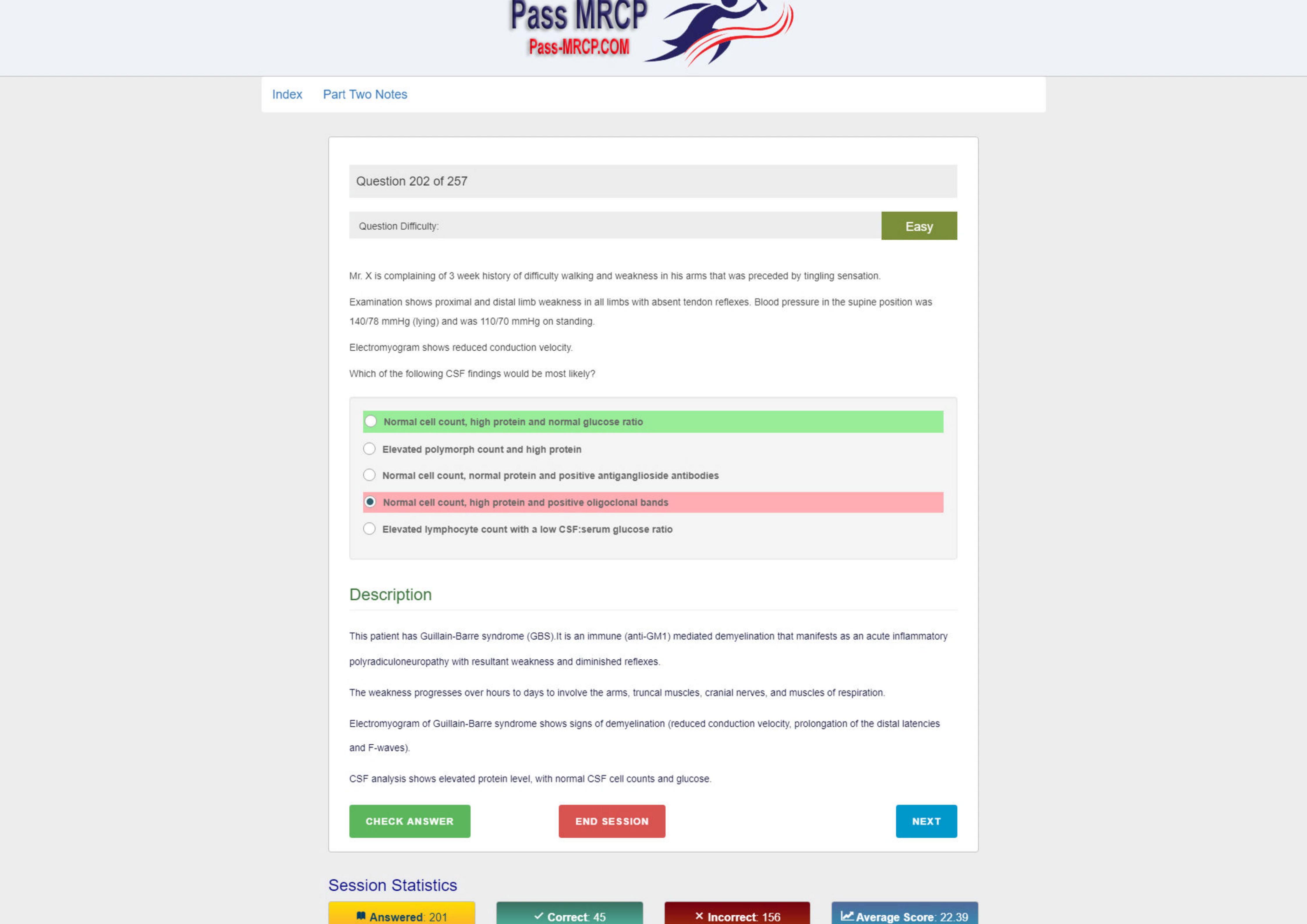
○ **Polymyositis**
● **Acid maltase deficiency**
○ **Amyotrophic lateral sclerosis**
○ **Tauri disease**
○ **Endocrinal myopathy**

Description

Acid maltase deficiency (AMD) is an autosomal recessive disease characterized by an excessive accumulation of glycogen within lysosome-derived vacuoles in nearly all types of cells. It is manifested by:

- Muscle hypotonia, weakness and areflexia
- Mental retardation
- Macroglossia
- Respiratory muscle weakness and pulmonary atelectasis
- Dysphagia
- Massive cardiomegaly
- Hepatomegaly

Session Statistics



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Question Difficulty: Easy

Mr. X is complaining of 3 week history of difficulty walking and weakness in his arms that was preceded by tingling sensation.

Examination shows proximal and distal limb weakness in all limbs with absent tendon reflexes. Blood pressure in the supine position was 140/78 mmHg (lying) and was 110/70 mmHg on standing.

Electromyogram shows reduced conduction velocity.

Which of the following CSF findings would be most likely?

- ○ **Normal cell count, high protein and normal glucose ratio**
- ○ **Elevated polymorph count and high protein**
- ○ **Normal cell count, normal protein and positive antiganglioside antibodies**
- ● **Normal cell count, high protein and positive oligoclonal bands**
- ○ **Elevated lymphocyte count with a low CSF:serum glucose ratio**

Description

This patient has Guillain-Barre syndrome (GBS).It is an immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

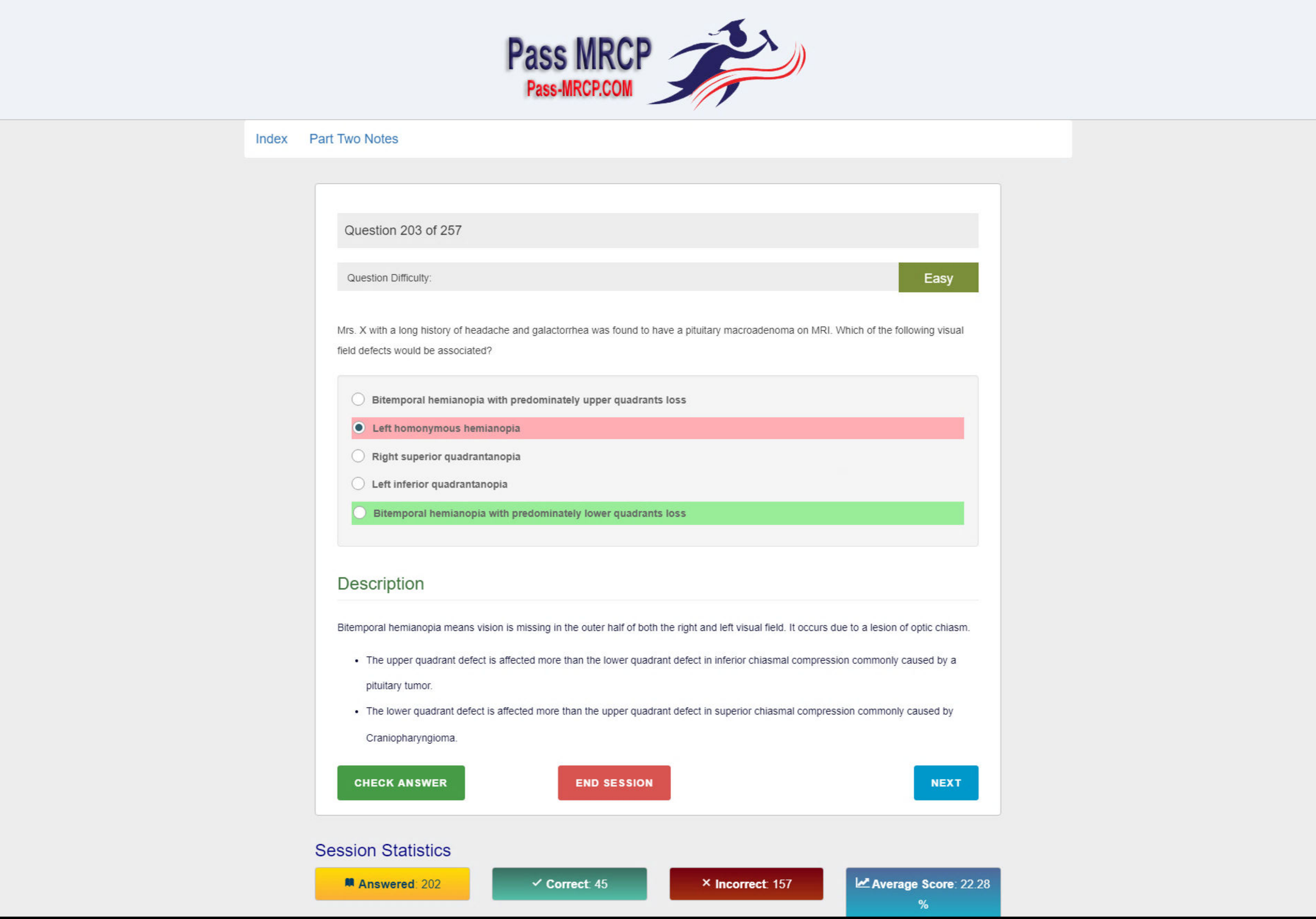
The weakness progresses over hours to days to involve the arms, truncal muscles, cranial nerves, and muscles of respiration.

Electromyogram of Guillain-Barre syndrome shows signs of demyelination (reduced conduction velocity, prolongation of the distal latencies and F-waves).

CSF analysis shows elevated protein level, with normal CSF cell counts and glucose.

Session Statistics

Answered: 201 ✓ Correct: 45 ✕ Incorrect: 156 Average Score: 22.39



Question 203 of 257

Question Difficulty: **Easy**

Mrs. X with a long history of headache and galactorrhea was found to have a pituitary macroadenoma on MRI. Which of the following visual field defects would be associated?

○ **Bitemporal hemianopia with predominately upper quadrants loss**

● **Left homonymous hemianopia**

○ **Right superior quadrantanopia**

○ **Left inferior quadrantanopia**

○ **Bitemporal hemianopia with predominately lower quadrants loss**

Description

Bitemporal hemianopia means vision is missing in the outer half of both the right and left visual field. It occurs due to a lesion of optic chiasm.

- The upper quadrant defect is affected more than the lower quadrant defect in inferior chiasmal compression commonly caused by a pituitary tumor.
- The lower quadrant defect is affected more than the upper quadrant defect in superior chiasmal compression commonly caused by Craniopharyngioma.

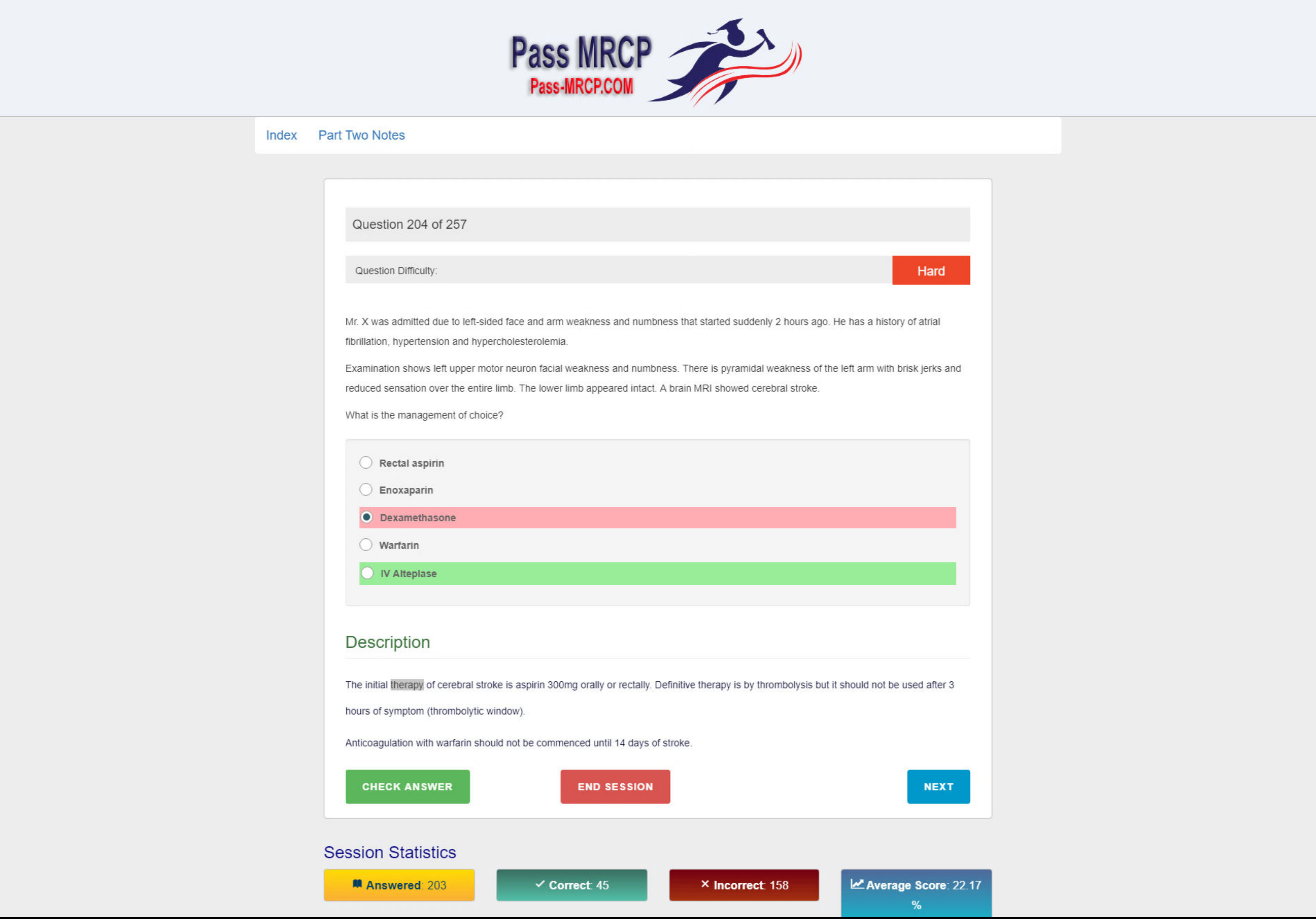
Session Statistics

Answered: 202

✓ **Correct**: 45

× **Incorrect**: 157

Average Score: 22.28 %



Question 204 of 257

Question Difficulty: Hard

Mr. X was admitted due to left-sided face and arm weakness and numbness that started suddenly 2 hours ago. He has a history of atrial fibrillation, hypertension and hypercholesterolemia.

Examination shows left upper motor neuron facial weakness and numbness. There is pyramidal weakness of the left arm with brisk jerks and reduced sensation over the entire limb. The lower limb appeared intact. A brain MRI showed cerebral stroke.

What is the management of choice?

- ○ **Rectal aspirin**
- ○ **Enoxaparin**
- ● **Dexamethasone**
- ○ **Warfarin**
- ○ **IV Alteplase**

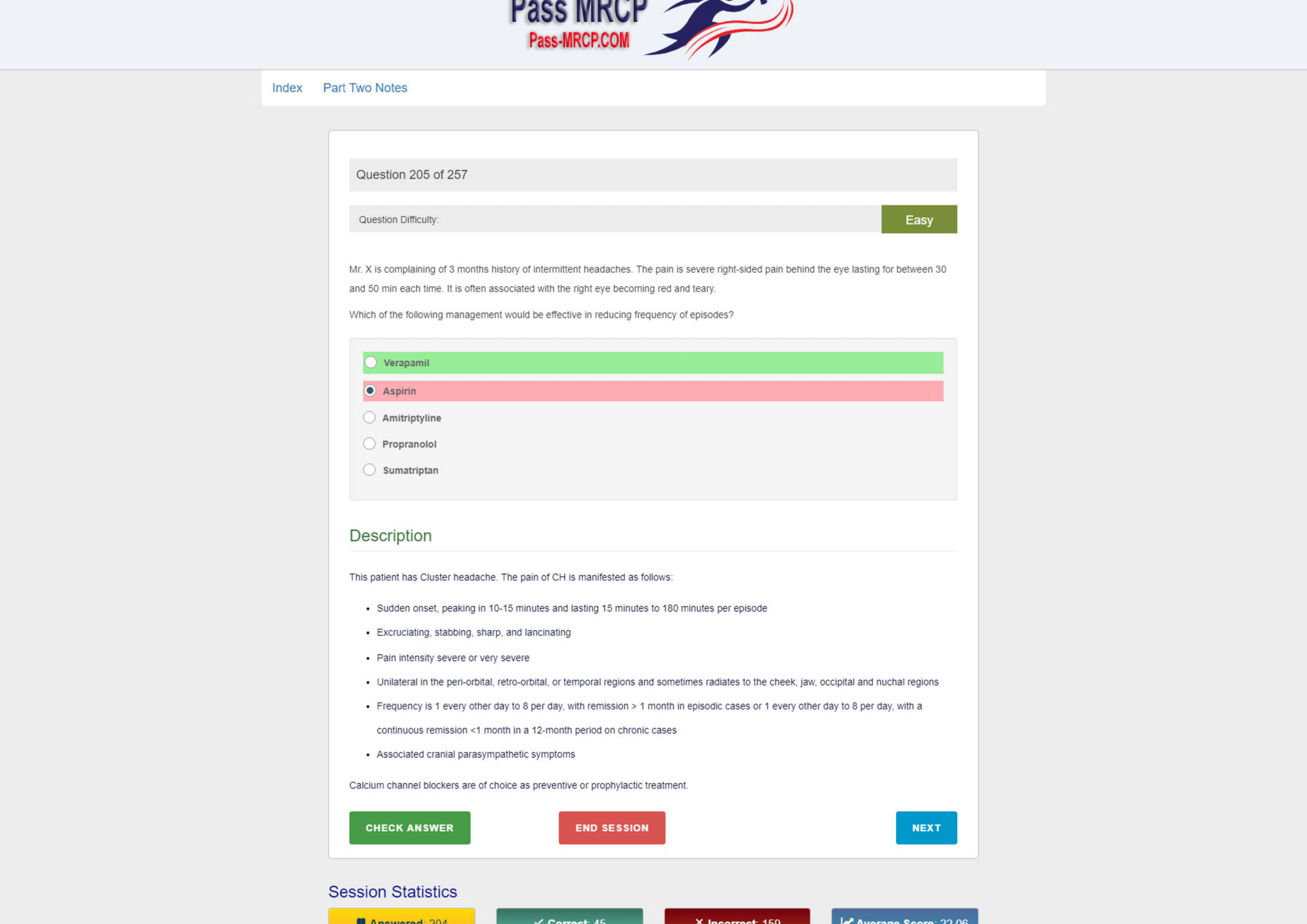
Description

The initial therapy of cerebral stroke is aspirin 300mg orally or rectally. Definitive therapy is by thrombolysis but it should not be used after 3 hours of symptom (thrombolytic window).

Anticoagulation with warfarin should not be commenced until 14 days of stroke.

Session Statistics

Answered: 203
Correct: 45
Incorrect: 158
Average Score: 22.17 %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Question 205 of 257

Question Difficulty: Easy

Mr. X is complaining of 3 months history of intermittent headaches. The pain is severe right-sided pain behind the eye lasting for between 30 and 50 min each time. It is often associated with the right eye becoming red and teary.

Which of the following management would be effective in reducing frequency of episodes?

○ Verapamil
● Aspirin
○ Amitriptyline
○ Propranolol
○ Sumatriptan

Description

This patient has Cluster headache. The pain of CH is manifested as follows:

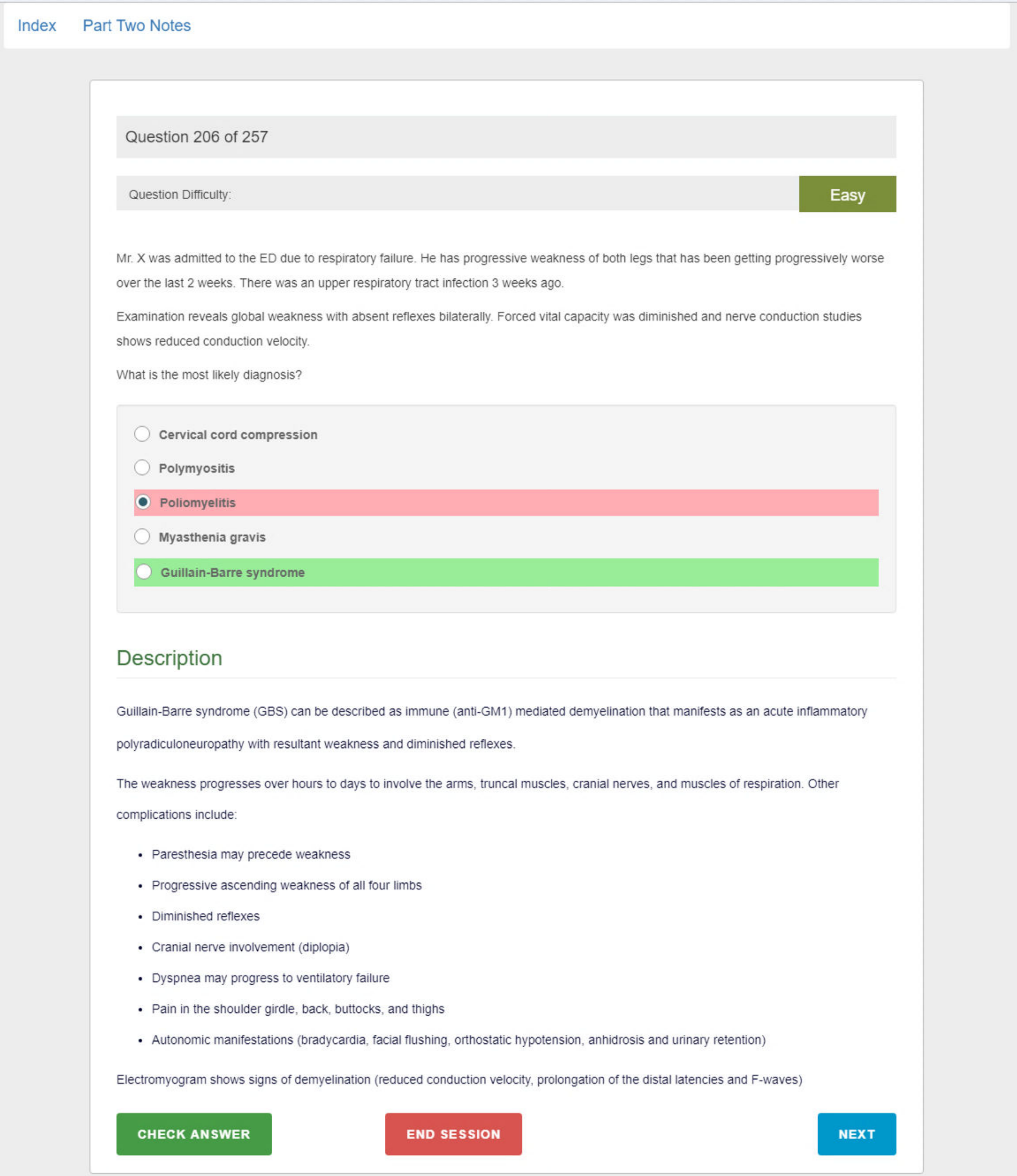
- Sudden onset, peaking in 10-15 minutes and lasting 15 minutes to 180 minutes per episode
- Excruciating, stabbing, sharp, and lancinating
- Pain intensity severe or very severe
- Unilateral in the peri-orbital, retro-orbital, or temporal regions and sometimes radiates to the cheek, jaw, occipital and nuchal regions
- Frequency is 1 every other day to 8 per day, with remission > 1 month in episodic cases or 1 every other day to 8 per day, with a continuous remission <1 month in a 12-month period on chronic cases
- Associated cranial parasympathetic symptoms

Calcium channel blockers are of choice as preventive or prophylactic treatment.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 204
✓ Correct: 45
✗ Incorrect: 159
Average Score: 22.06



Question 206 of 257

Question Difficulty: Easy

Mr. X was admitted to the ED due to respiratory failure. He has progressive weakness of both legs that has been getting progressively worse over the last 2 weeks. There was an upper respiratory tract infection 3 weeks ago.

Examination reveals global weakness with absent reflexes bilaterally. Forced vital capacity was diminished and nerve conduction studies shows reduced conduction velocity.

What is the most likely diagnosis?

○ **Cervical cord compression**
○ **Polymyositis**
● **Poliomyelitis**
○ **Myasthenia gravis**
○ **Guillain-Barre syndrome**

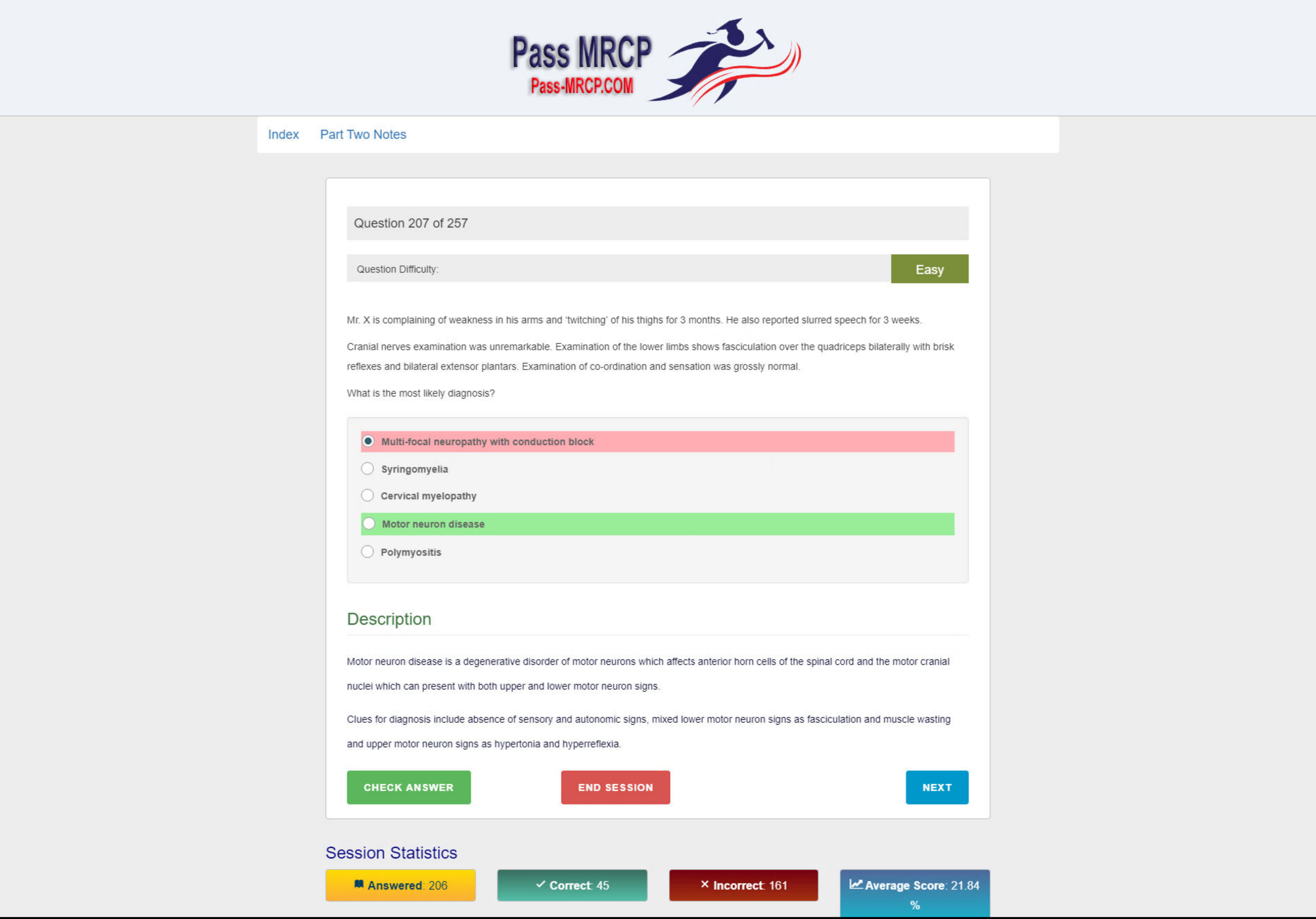
Description

Guillain-Barre syndrome (GBS) can be described as immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

The weakness progresses over hours to days to involve the arms, truncal muscles, cranial nerves, and muscles of respiration. Other complications include:

- Paresthesia may precede weakness
- Progressive ascending weakness of all four limbs
- Diminished reflexes
- Cranial nerve involvement (diplopia)
- Dyspnea may progress to ventilatory failure
- Pain in the shoulder girdle, back, buttocks, and thighs
- Autonomic manifestations (bradycardia, facial flushing, orthostatic hypotension, anhidrosis and urinary retention)

Electromyogram shows signs of demyelination (reduced conduction velocity, prolongation of the distal latencies and F-waves)



Question 207 of 257

Question Difficulty: Easy

Mr. X is complaining of weakness in his arms and 'twitching' of his thighs for 3 months. He also reported slurred speech for 3 weeks.

Cranial nerves examination was unremarkable. Examination of the lower limbs shows fasciculation over the quadriceps bilaterally with brisk reflexes and bilateral extensor plantars. Examination of co-ordination and sensation was grossly normal.

What is the most likely diagnosis?

- ● Multi-focal neuropathy with conduction block
- ○ Syringomyelia
- ○ Cervical myelopathy
- ○ Motor neuron disease
- ○ Polymyositis

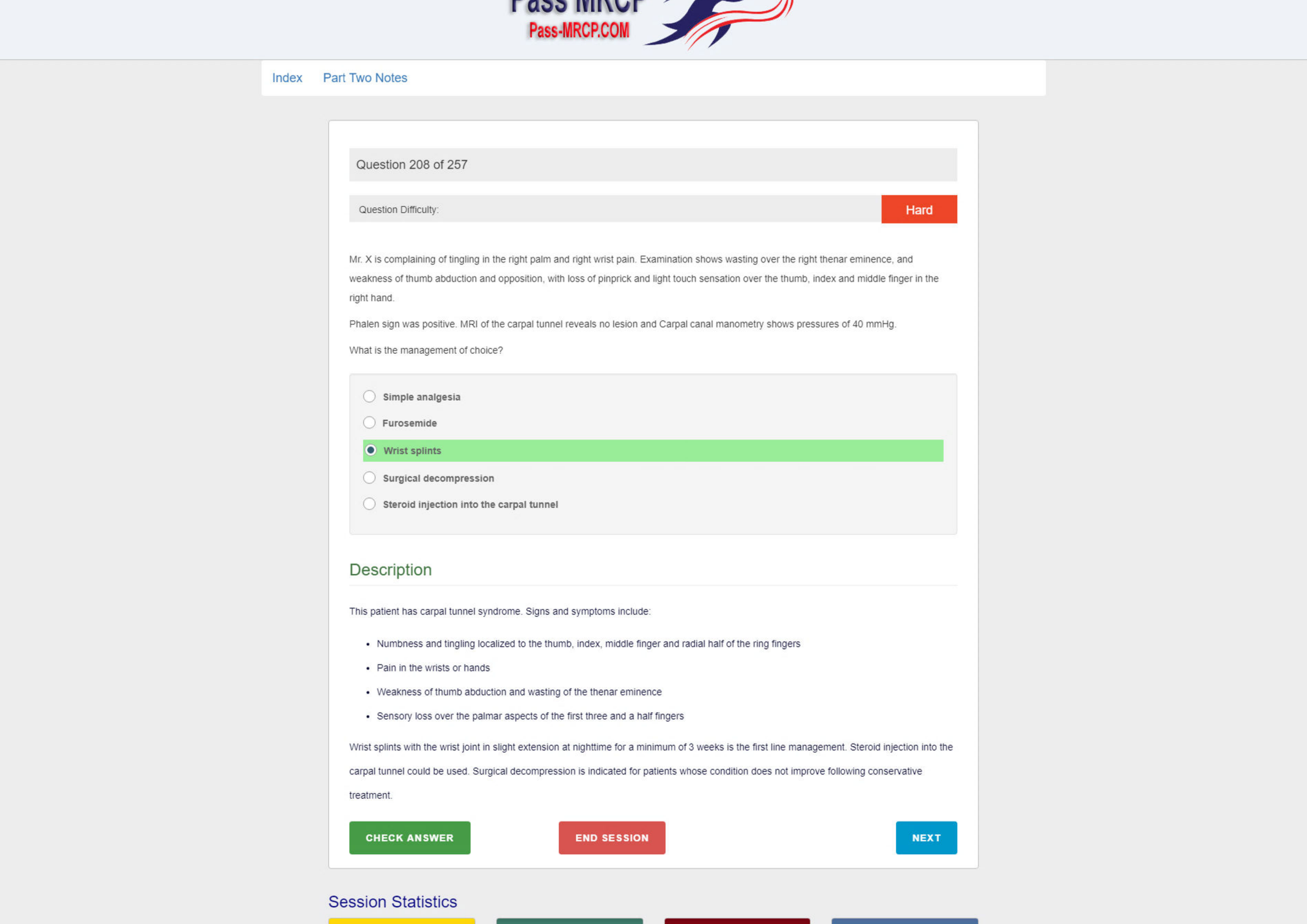
Description

Motor neuron disease is a degenerative disorder of motor neurons which affects anterior horn cells of the spinal cord and the motor cranial nuclei which can present with both upper and lower motor neuron signs.

Clues for diagnosis include absence of sensory and autonomic signs, mixed lower motor neuron signs as fasciculation and muscle wasting and upper motor neuron signs as hypertonia and hyperreflexia.

Session Statistics

Answered: 206
✓ Correct: 45
✕ Incorrect: 161
Average Score: 21.84 %



Question 208 of 257

Question Difficulty: Hard

Mr. X is complaining of tingling in the right palm and right wrist pain. Examination shows wasting over the right thenar eminence, and weakness of thumb abduction and opposition, with loss of pinprick and light touch sensation over the thumb, index and middle finger in the right hand.

Phalen sign was positive. MRI of the carpal tunnel reveals no lesion and Carpal canal manometry shows pressures of 40 mmHg.

What is the management of choice?

○ **Simple analgesia**
○ **Furosemide**
● **Wrist splints**
○ **Surgical decompression**
○ **Steroid injection into the carpal tunnel**

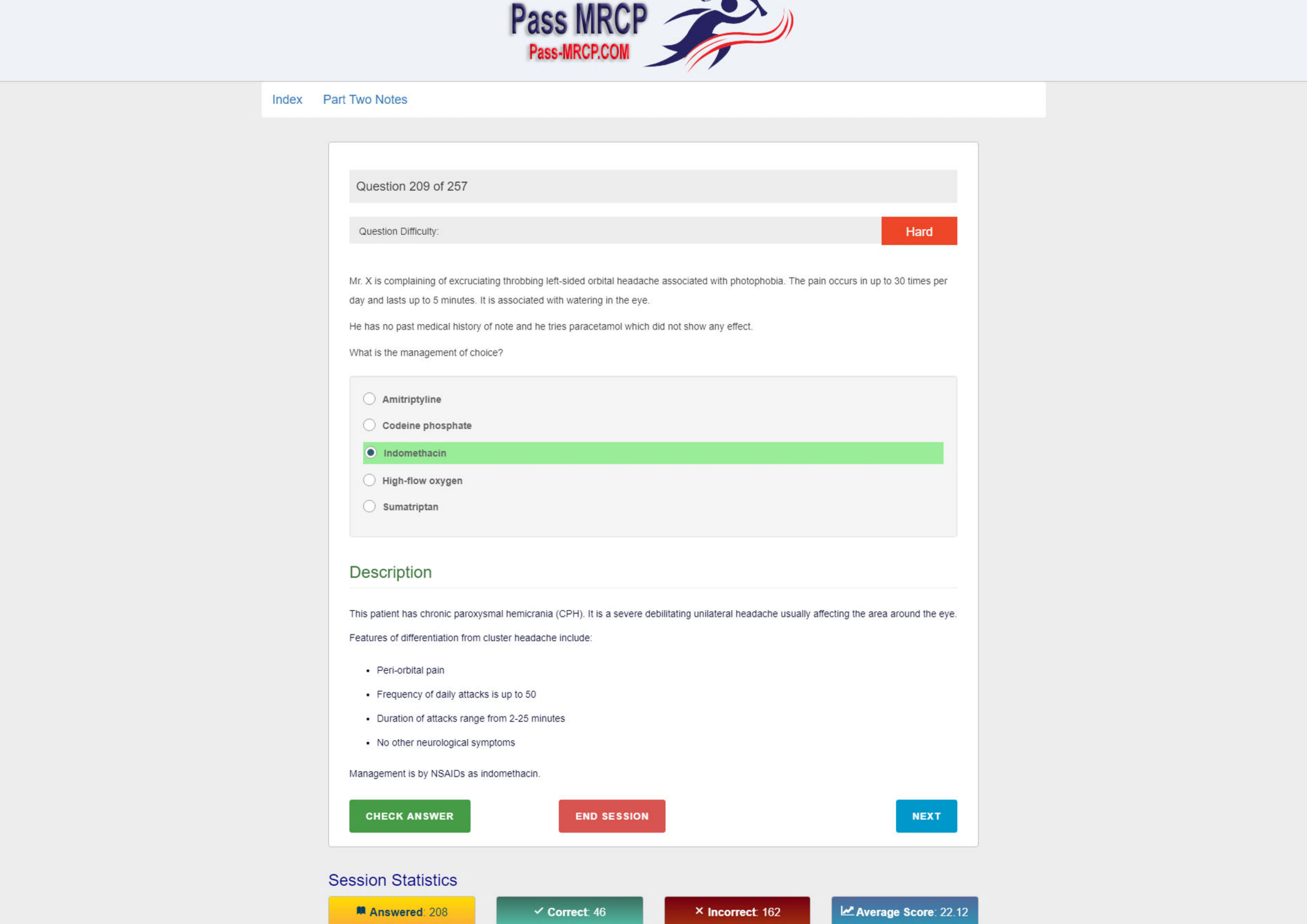
Description

This patient has carpal tunnel syndrome. Signs and symptoms include:

- Numbness and tingling localized to the thumb, index, middle finger and radial half of the ring fingers
- Pain in the wrists or hands
- Weakness of thumb abduction and wasting of the thenar eminence
- Sensory loss over the palmar aspects of the first three and a half fingers

Wrist splints with the wrist joint in slight extension at nighttime for a minimum of 3 weeks is the first line management. Steroid injection into the carpal tunnel could be used. Surgical decompression is indicated for patients whose condition does not improve following conservative treatment.

Session Statistics



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Question 209 of 257

Question Difficulty: **Hard**

Mr. X is complaining of excruciating throbbing left-sided orbital headache associated with photophobia. The pain occurs in up to 30 times per day and lasts up to 5 minutes. It is associated with watering in the eye.

He has no past medical history of note and he tries paracetamol which did not show any effect.

What is the management of choice?

○ **Amitriptyline**
○ **Codeine phosphate**
● **Indomethacin**
○ **High-flow oxygen**
○ **Sumatriptan**

Description

This patient has chronic paroxysmal hemicrania (CPH). It is a severe debilitating unilateral headache usually affecting the area around the eye.

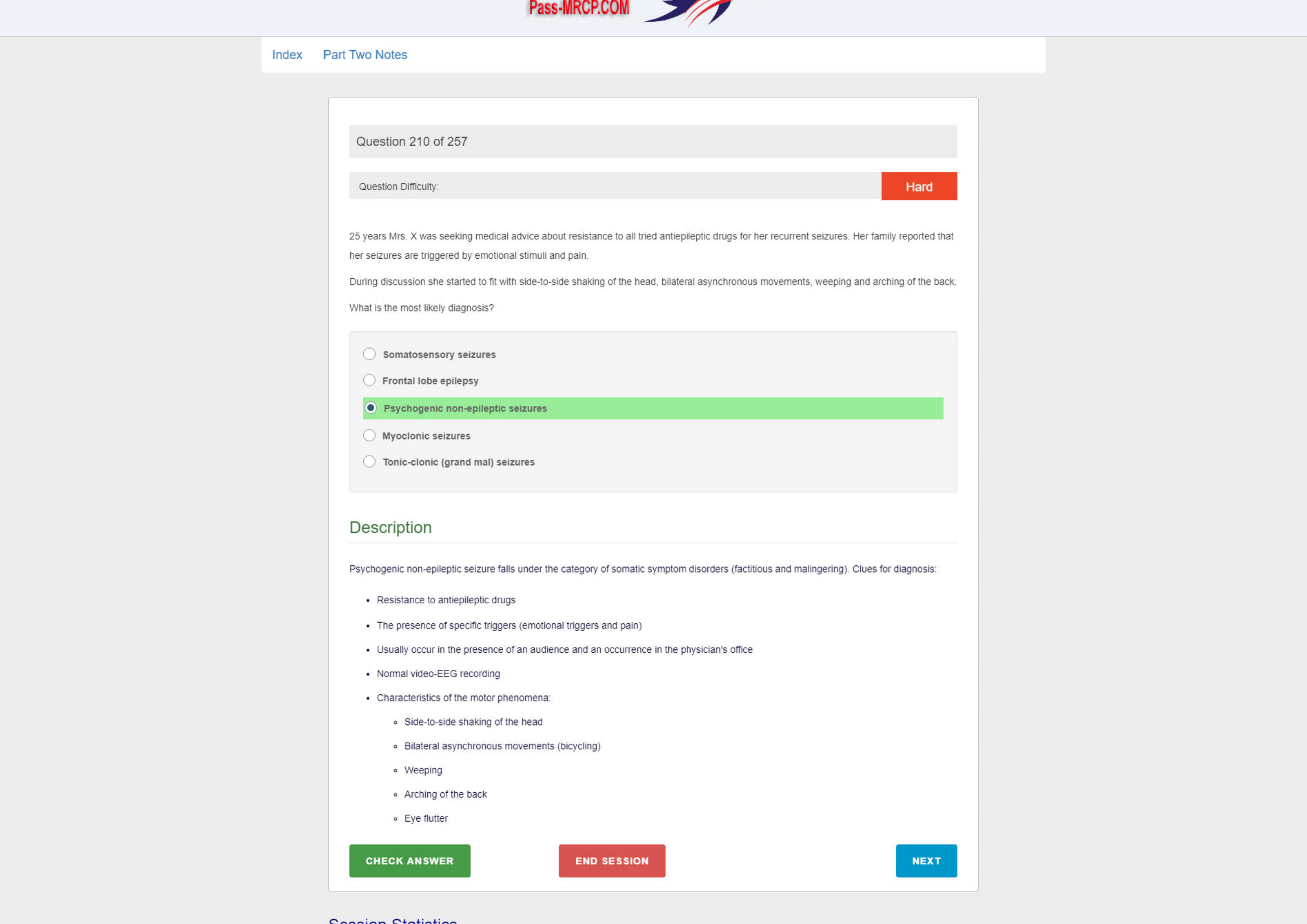
Features of differentiation from cluster headache include:

- Peri-orbital pain
- Frequency of daily attacks is up to 50
- Duration of attacks range from 2-25 minutes
- No other neurological symptoms

Management is by NSAIDs as indomethacin.

Session Statistics

Answered: 208
Correct: 46
Incorrect: 162
Average Score: 22.12



Question 210 of 257

Question Difficulty: **Hard**

25 years Mrs. X was seeking medical advice about resistance to all tried antiepileptic drugs for her recurrent seizures. Her family reported that her seizures are triggered by emotional stimuli and pain.

During discussion she started to fit with side-to-side shaking of the head, bilateral asynchronous movements, weeping and arching of the back.

What is the most likely diagnosis?

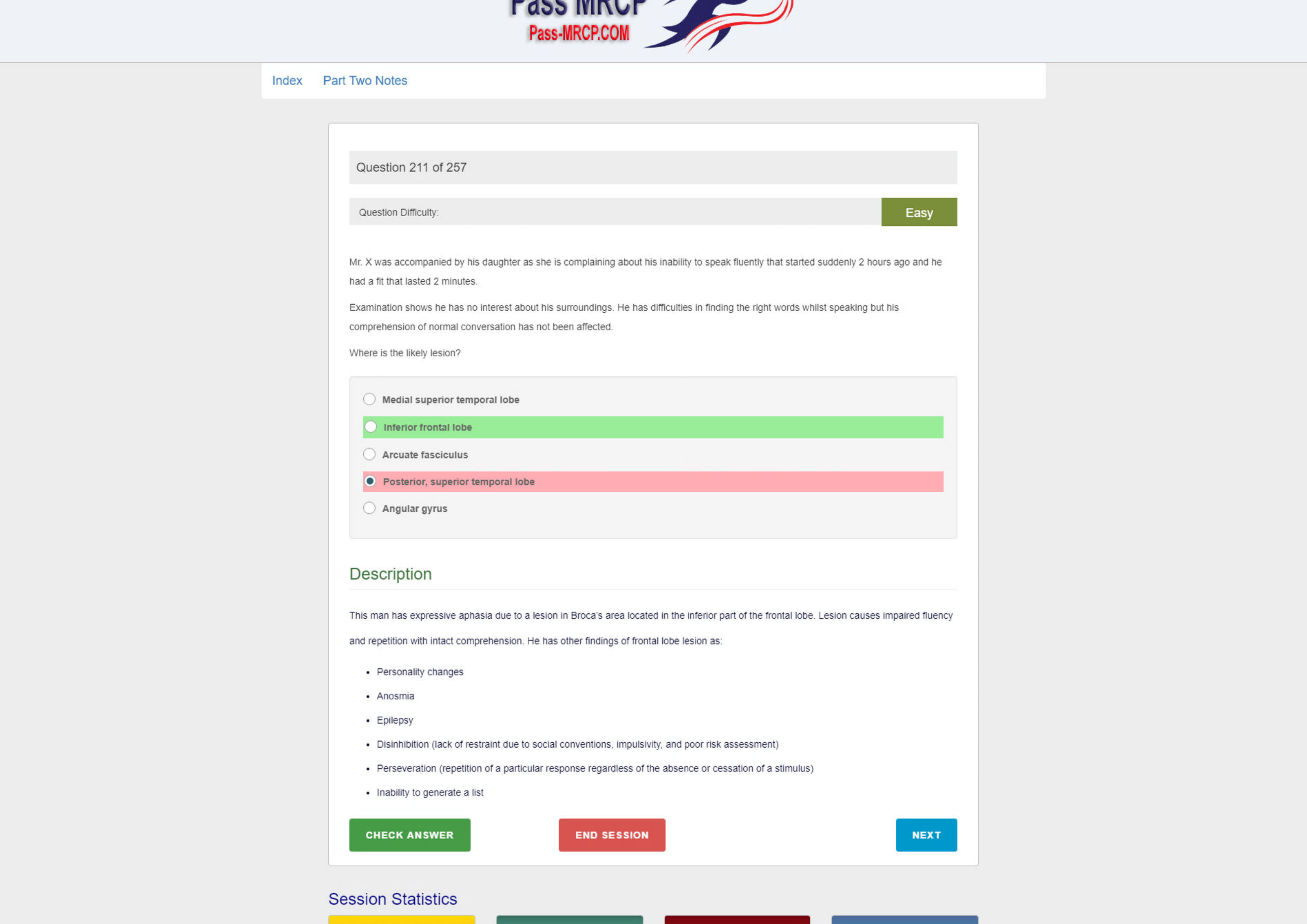
○ **Somatosensory seizures**
○ **Frontal lobe epilepsy**
● **Psychogenic non-epileptic seizures**
○ **Myoclonic seizures**
○ **Tonic-clonic (grand mal) seizures**

Description

Psychogenic non-epileptic seizure falls under the category of somatic symptom disorders (factitious and malingering). Clues for diagnosis:

- Resistance to antiepileptic drugs
- The presence of specific triggers (emotional triggers and pain)
- Usually occur in the presence of an audience and an occurrence in the physician's office
- Normal video-EEG recording
- Characteristics of the motor phenomena:
    - Side-to-side shaking of the head
    - Bilateral asynchronous movements (bicycling)
    - Weeping
    - Arching of the back
    - Eye flutter

Session Statistics



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Question Difficulty: Easy

Mr. X was accompanied by his daughter as she is complaining about his inability to speak fluently that started suddenly 2 hours ago and he had a fit that lasted 2 minutes.

Examination shows he has no interest about his surroundings. He has difficulties in finding the right words whilst speaking but his comprehension of normal conversation has not been affected.

Where is the likely lesion?

○ **Medial superior temporal lobe**

○ **Inferior frontal lobe**

○ **Arcuate fasciculus**

● **Posterior, superior temporal lobe**

○ **Angular gyrus**

Description

This man has expressive aphasia due to a lesion in Broca's area located in the inferior part of the frontal lobe. Lesion causes impaired fluency and repetition with intact comprehension. He has other findings of frontal lobe lesion as:

- Personality changes
- Anosmia
- Epilepsy
- Disinhibition (lack of restraint due to social conventions, impulsivity, and poor risk assessment)
- Perseveration (repetition of a particular response regardless of the absence or cessation of a stimulus)
- Inability to generate a list

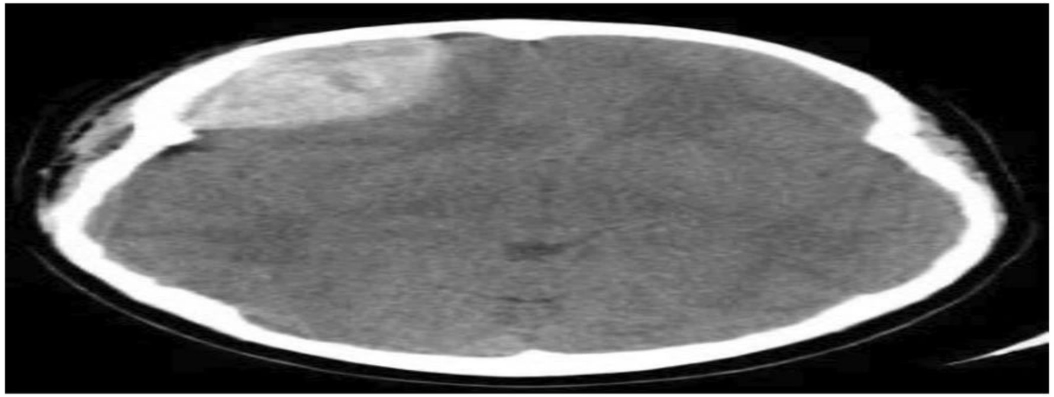
Session Statistics

Question 212 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED unconscious after he had a hit the side the head after a car accident. A witness reported he initially collapsed to the ground for 2 minutes and recovered again after 2 minutes complaining of a headache. 10 minutes later he collapsed again after 30 minutes.

Brain CT was done and shown in the image.



What type of injury that most likely occurred?

- ○ Intraventricular hemorrhage
- ○ Epidural hemorrhage
- ● Subarachnoid hemorrhage
- ○ Cerebral contusion
- ○ Subdural hematoma

Description

The CT shows epidural hemorrhage (extradural). Hemorrhage occurs between the dura mater, there is rapidly increased intracranial pressure because the bleed is from a high-pressure system.

It is manifested by loss of consciousness followed by a lucid interval then sudden deterioration occurs.

CHECK ANSWER END SESSION NEXT

Question 213 of 257

Question Difficulty: Hard

10 years old boy was accompanied by his mother due to witnessed fits that occur several times each day. Each episode last a few seconds and are associated with a quick recovery and he is usually unaware of the seizure.

His EEG shows bilateral, symmetrical 3Hz spike and wave pattern.

What is the most likely diagnosis?

○ Frontal lobe epilepsy
○ Absence epilepsy
● Idiopathic generalized epilepsy
○ Temporal lobe epilepsy
○ Myoclonic epilepsy

Description

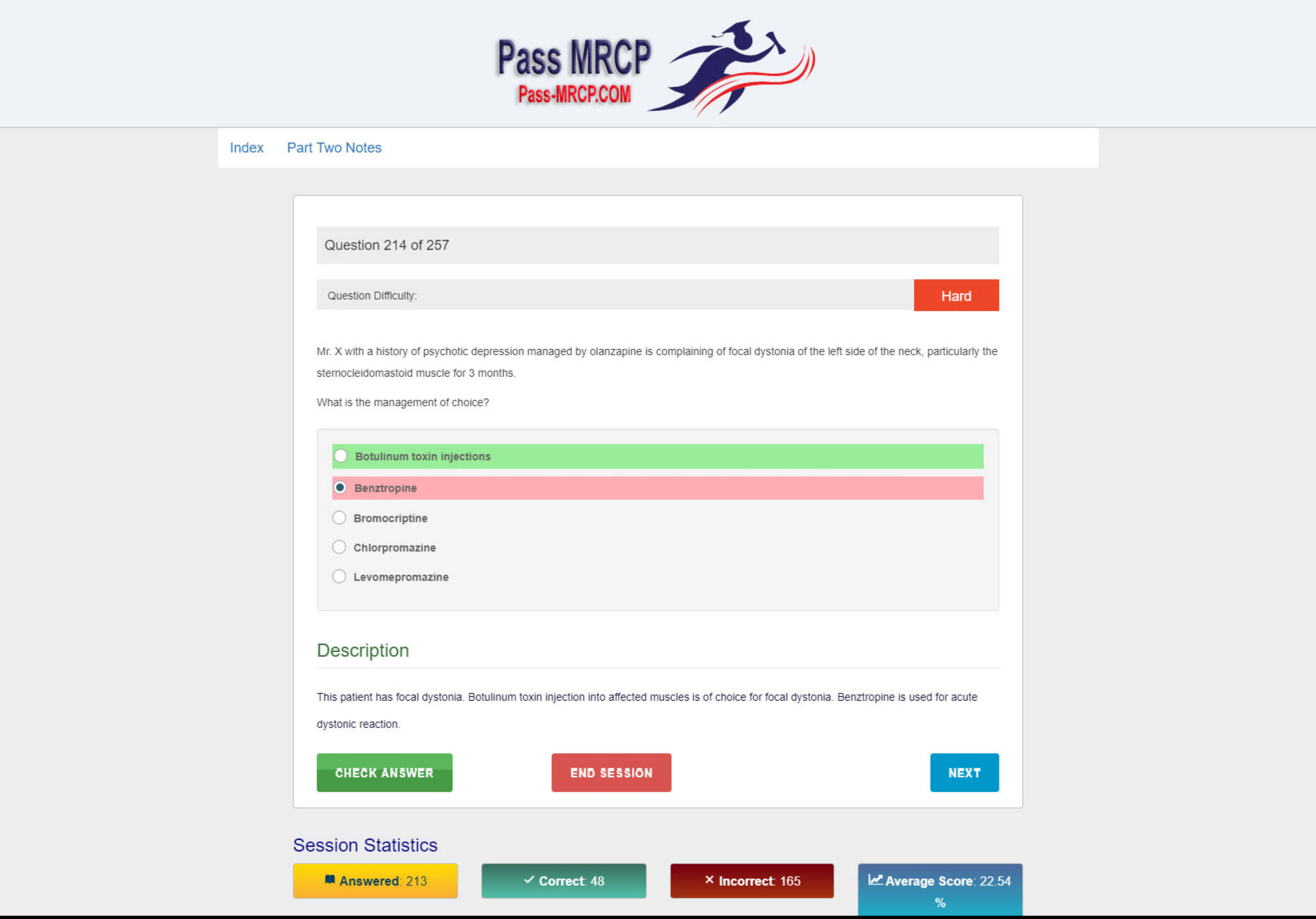
Absence (petit mal) features include:

- Mostly seen in children with good prognosis (90-95% become seizure free in adolescence)
- Seizures last a few seconds and are associated with a quick recovery
- Seizures may be provoked by hyperventilation or stress
- The child is usually unaware of the seizure
- They may occur many times a day
- EEG shows bilateral, symmetrical 3Hz spike and wave pattern

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 212
✓ **Correct**: 48
✕ **Incorrect**: 164
Average Score: 22.64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Question 214 of 257

Question Difficulty: Hard

Mr. X with a history of psychotic depression managed by olanzapine is complaining of focal dystonia of the left side of the neck, particularly the sternocleidomastoid muscle for 3 months.

What is the management of choice?

- ○ **Botulinum toxin injections**
- ● **Benztropine**
- ○ **Bromocriptine**
- ○ **Chlorpromazine**
- ○ **Levomepromazine**

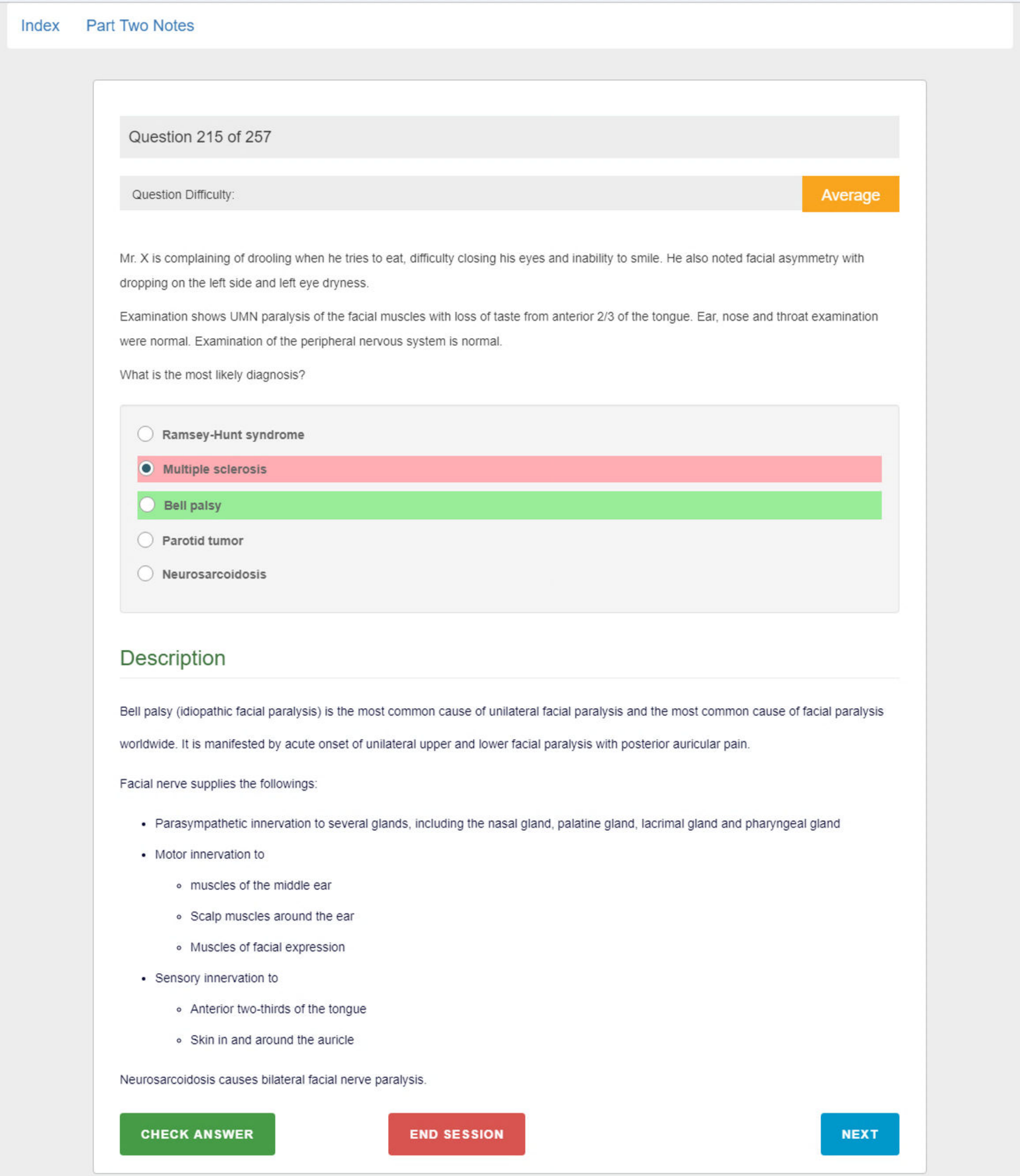
Description

This patient has focal dystonia. Botulinum toxin injection into affected muscles is of choice for focal dystonia. Benztropine is used for acute dystonic reaction.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 213
✓ **Correct**: 48
✕ **Incorrect**: 165
Average Score: 22.54 %



Question 215 of 257

Question Difficulty: **Average**

Mr. X is complaining of drooling when he tries to eat, difficulty closing his eyes and inability to smile. He also noted facial asymmetry with dropping on the left side and left eye dryness.

Examination shows UMN paralysis of the facial muscles with loss of taste from anterior 2/3 of the tongue. Ear, nose and throat examination were normal. Examination of the peripheral nervous system is normal.

What is the most likely diagnosis?

○ **Ramsey-Hunt syndrome**
● **Multiple sclerosis**
○ **Bell palsy**
○ **Parotid tumor**
○ **Neurosarcoidosis**

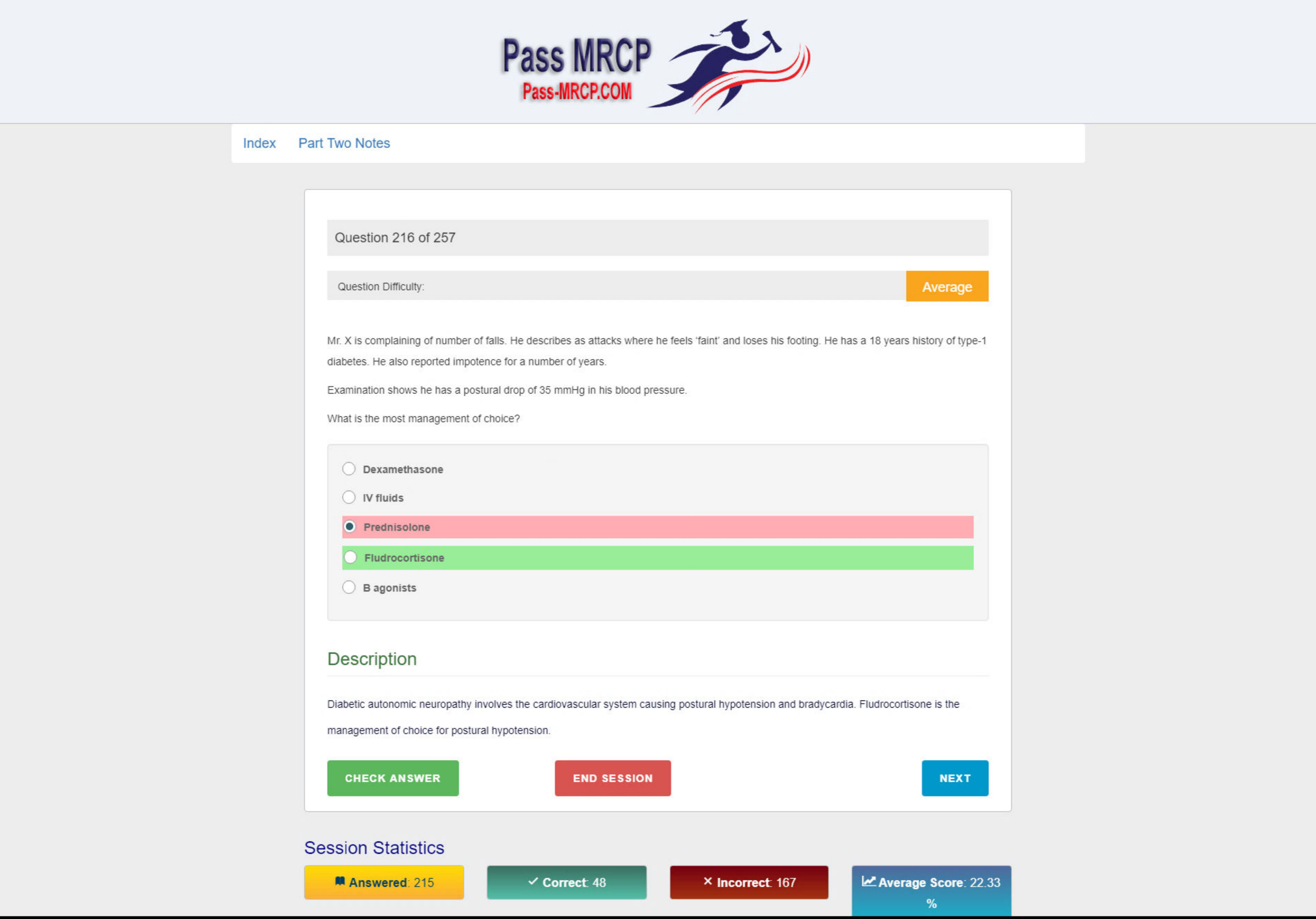
Description

Bell palsy (idiopathic facial paralysis) is the most common cause of unilateral facial paralysis and the most common cause of facial paralysis worldwide. It is manifested by acute onset of unilateral upper and lower facial paralysis with posterior auricular pain.

Facial nerve supplies the followings:

- Parasympathetic innervation to several glands, including the nasal gland, palatine gland, lacrimal gland and pharyngeal gland
- Motor innervation to
  - muscles of the middle ear
  - Scalp muscles around the ear
  - Muscles of facial expression
- Sensory innervation to
  - Anterior two-thirds of the tongue
  - Skin in and around the auricle

Neurosarcoidosis causes bilateral facial nerve paralysis.



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Question Difficulty: Average

Mr. X is complaining of number of falls. He describes as attacks where he feels 'faint' and loses his footing. He has a 18 years history of type-1 diabetes. He also reported impotence for a number of years.

Examination shows he has a postural drop of 35 mmHg in his blood pressure.

What is the most management of choice?

- ○ Dexamethasone
- ○ IV fluids
- ● Prednisolone
- ○ Fludrocortisone
- ○ B agonists

Description

Diabetic autonomic neuropathy involves the cardiovascular system causing postural hypotension and bradycardia. Fludrocortisone is the management of choice for postural hypotension.

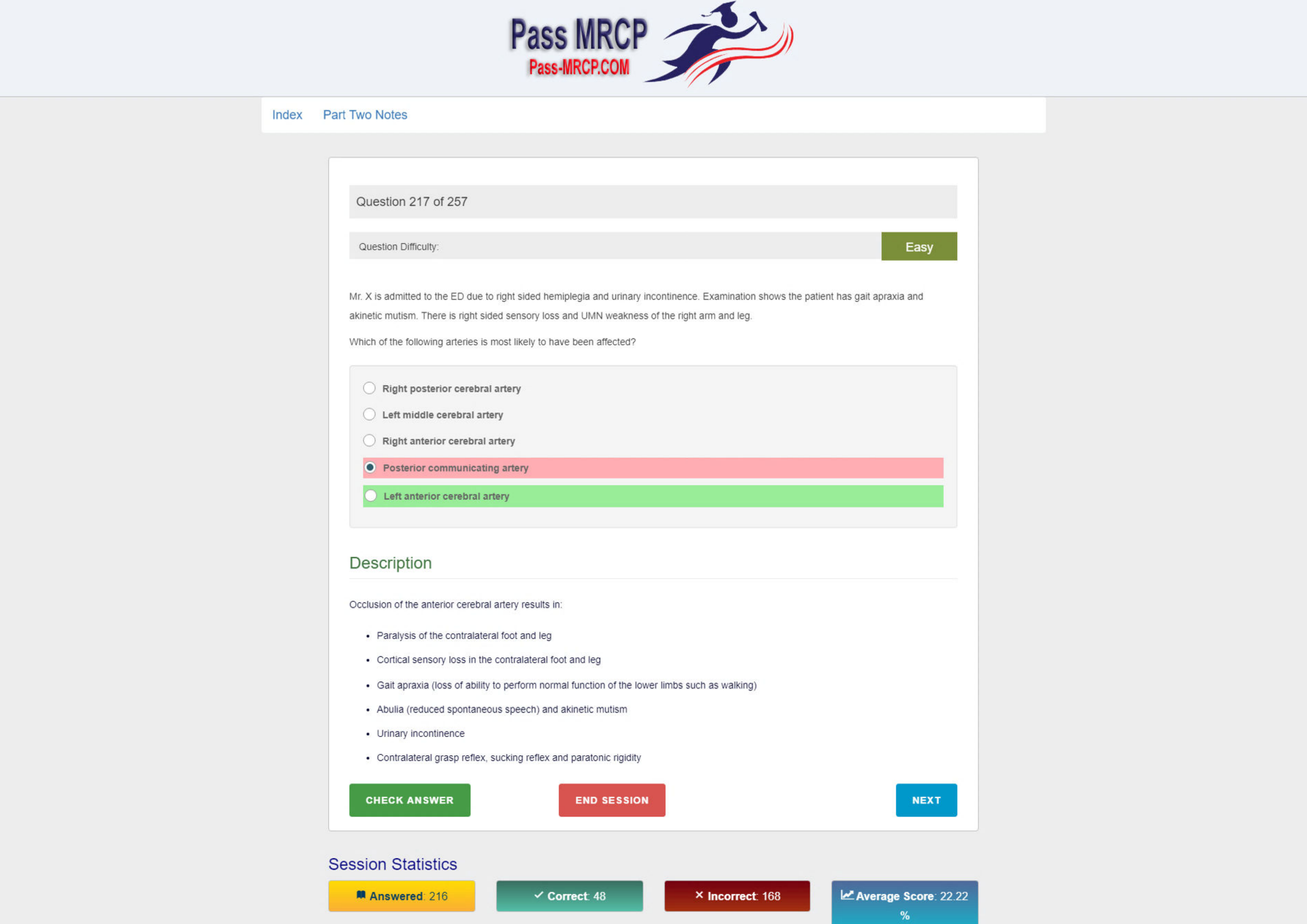
Session Statistics

Answered: 215

✓ **Correct**: 48

✕ **Incorrect**: 167

Average Score: 22.33 %



Question 217 of 257

Question Difficulty: Easy

Mr. X is admitted to the ED due to right sided hemiplegia and urinary incontinence. Examination shows the patient has gait apraxia and akinetic mutism. There is right sided sensory loss and UMN weakness of the right arm and leg.

Which of the following arteries is most likely to have been affected?

○ **Right posterior cerebral artery**
○ **Left middle cerebral artery**
○ **Right anterior cerebral artery**
● **Posterior communicating artery**
○ **Left anterior cerebral artery**

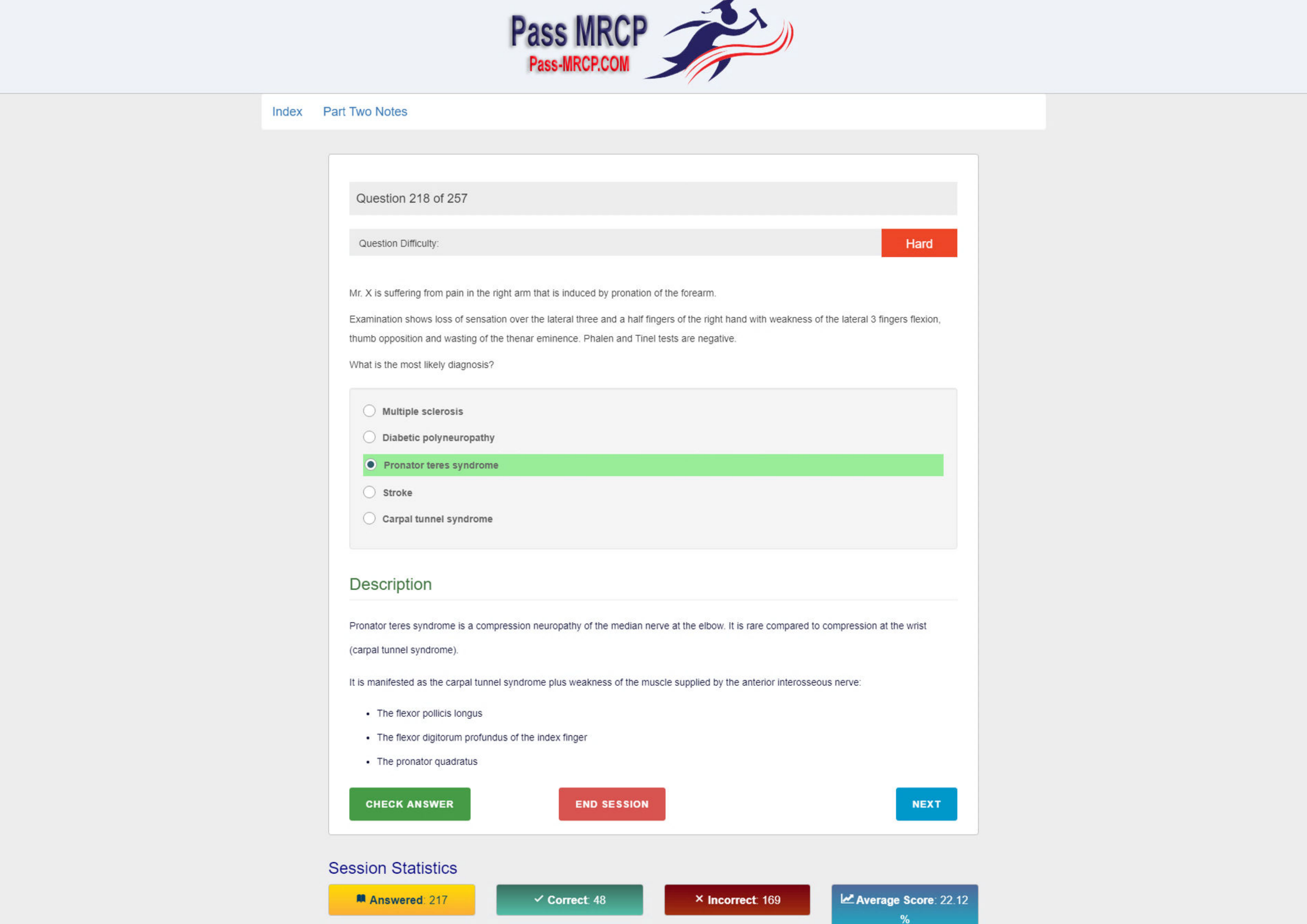
Description

Occlusion of the anterior cerebral artery results in:

- Paralysis of the contralateral foot and leg
- Cortical sensory loss in the contralateral foot and leg
- Gait apraxia (loss of ability to perform normal function of the lower limbs such as walking)
- Abulia (reduced spontaneous speech) and akinetic mutism
- Urinary incontinence
- Contralateral grasp reflex, sucking reflex and paratonic rigidity

Session Statistics

Answered: 216
✓ **Correct**: 48
✕ **Incorrect**: 168
Average Score: 22.22 %



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Question Difficulty: Hard

Mr. X is suffering from pain in the right arm that is induced by pronation of the forearm.

Examination shows loss of sensation over the lateral three and a half fingers of the right hand with weakness of the lateral 3 fingers flexion, thumb opposition and wasting of the thenar eminence. Phalen and Tinel tests are negative.

What is the most likely diagnosis?

○ **Multiple sclerosis**
○ **Diabetic polyneuropathy**
● **Pronator teres syndrome**
○ **Stroke**
○ **Carpal tunnel syndrome**

Description

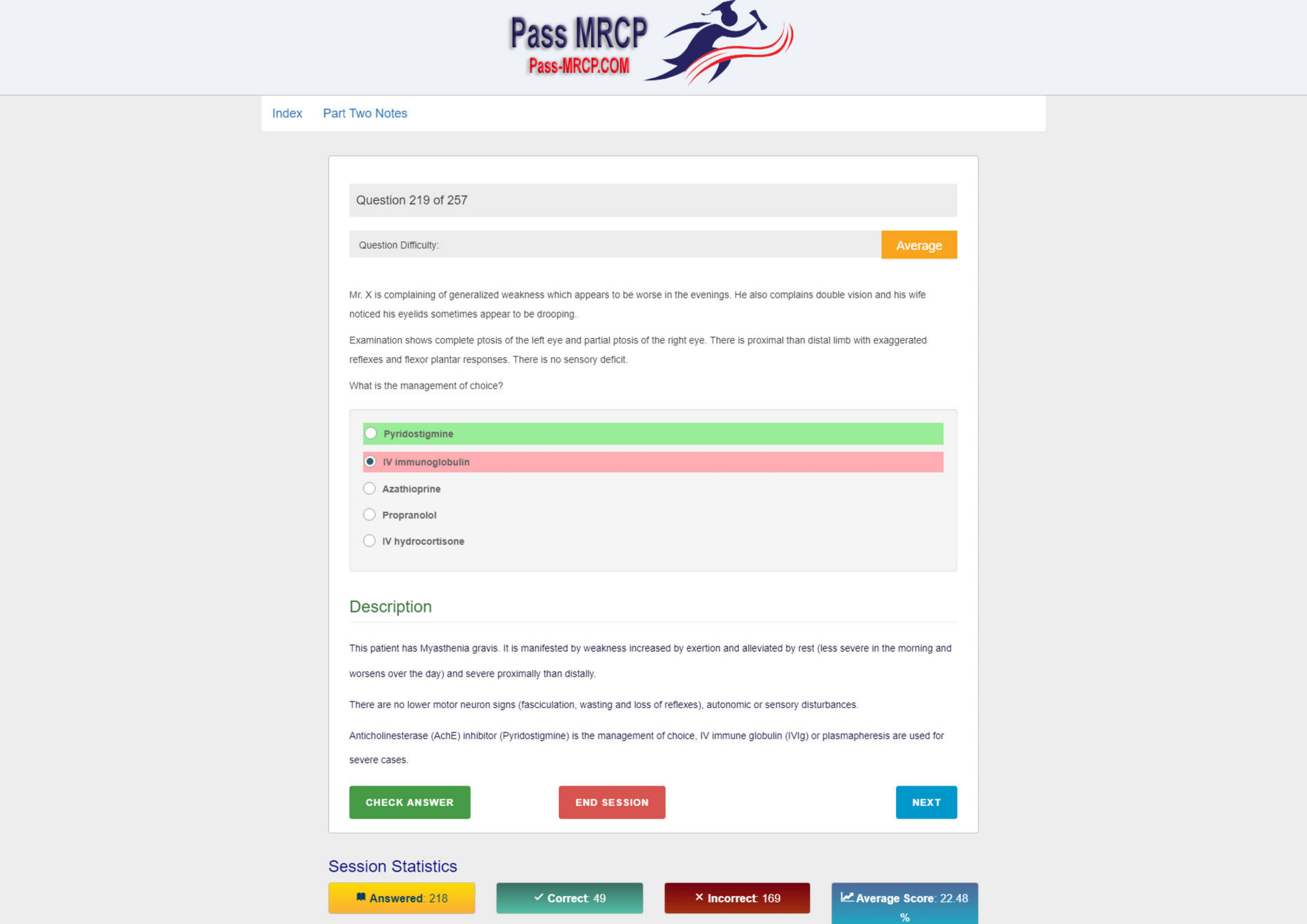
Pronator teres syndrome is a compression neuropathy of the median nerve at the elbow. It is rare compared to compression at the wrist (carpal tunnel syndrome).

It is manifested as the carpal tunnel syndrome plus weakness of the muscle supplied by the anterior interosseous nerve:

- The flexor pollicis longus
- The flexor digitorum profundus of the index finger
- The pronator quadratus

Session Statistics

Answered: 217
✓ **Correct**: 48
✕ **Incorrect**: 169
Average Score: 22.12 %



Question 219 of 257

Question Difficulty: **Average**

Mr. X is complaining of generalized weakness which appears to be worse in the evenings. He also complains double vision and his wife noticed his eyelids sometimes appear to be drooping.

Examination shows complete ptosis of the left eye and partial ptosis of the right eye. There is proximal than distal limb with exaggerated reflexes and flexor plantar responses. There is no sensory deficit.

What is the management of choice?

- ○ **Pyridostigmine**
- ● **IV immunoglobulin**
- ○ **Azathioprine**
- ○ **Propranolol**
- ○ **IV hydrocortisone**

Description

This patient has Myasthenia gravis. It is manifested by weakness increased by exertion and alleviated by rest (less severe in the morning and worsens over the day) and severe proximally than distally.

There are no lower motor neuron signs (fasciculation, wasting and loss of reflexes), autonomic or sensory disturbances.

Anticholinesterase (AchE) inhibitor (Pyridostigmine) is the management of choice, IV immune globulin (IVIg) or plasmapheresis are used for severe cases.

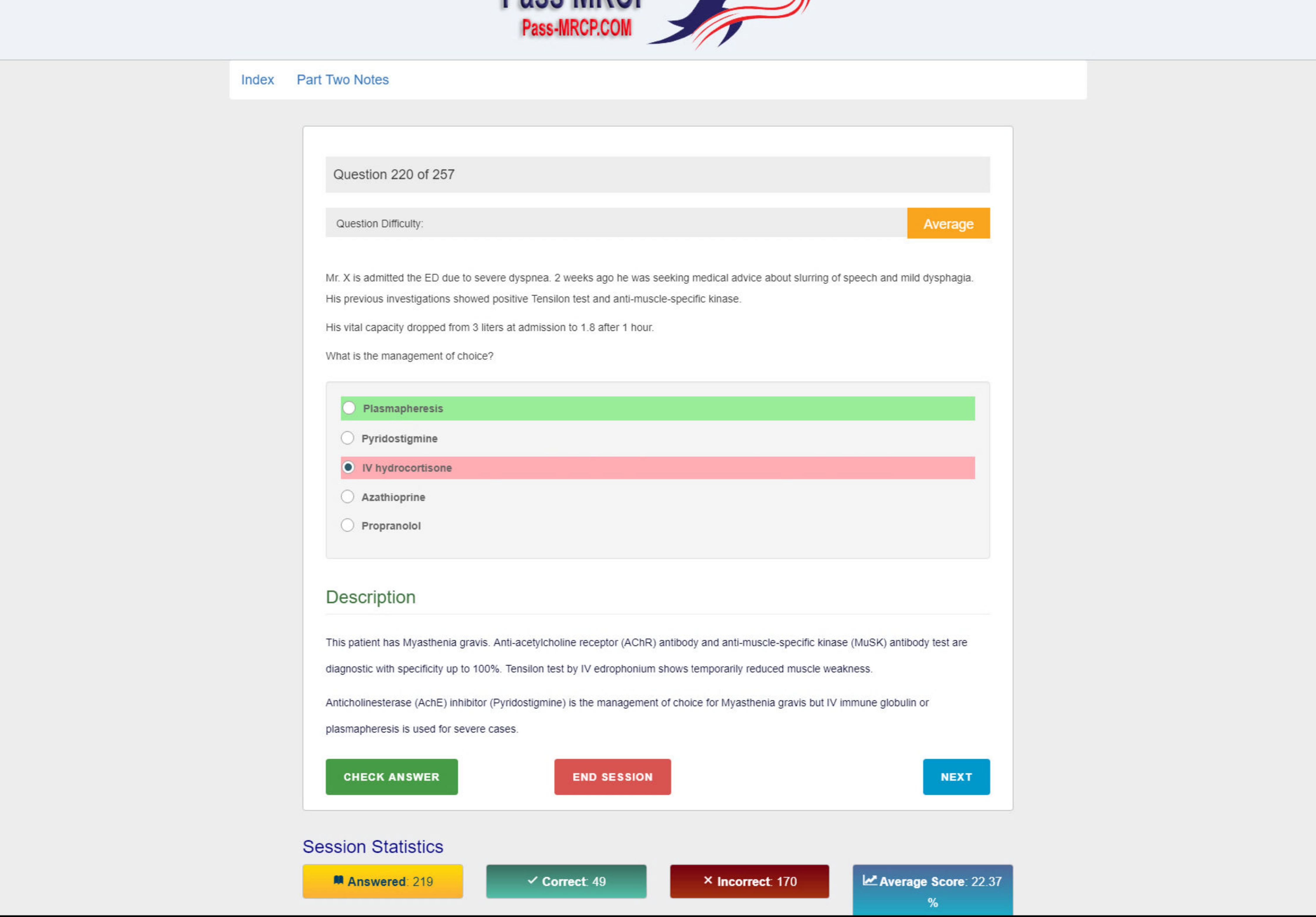
Session Statistics

Answered: 218

✓ **Correct**: 49

✕ **Incorrect**: 169

Average Score: 22.48 %



Question 220 of 257

Question Difficulty: Average

Mr. X is admitted the ED due to severe dyspnea. 2 weeks ago he was seeking medical advice about slurring of speech and mild dysphagia. His previous investigations showed positive Tensilon test and anti-muscle-specific kinase.

His vital capacity dropped from 3 liters at admission to 1.8 after 1 hour.

What is the management of choice?

- ○ Plasmapheresis
- ○ Pyridostigmine
- ● IV hydrocortisone
- ○ Azathioprine
- ○ Propranolol

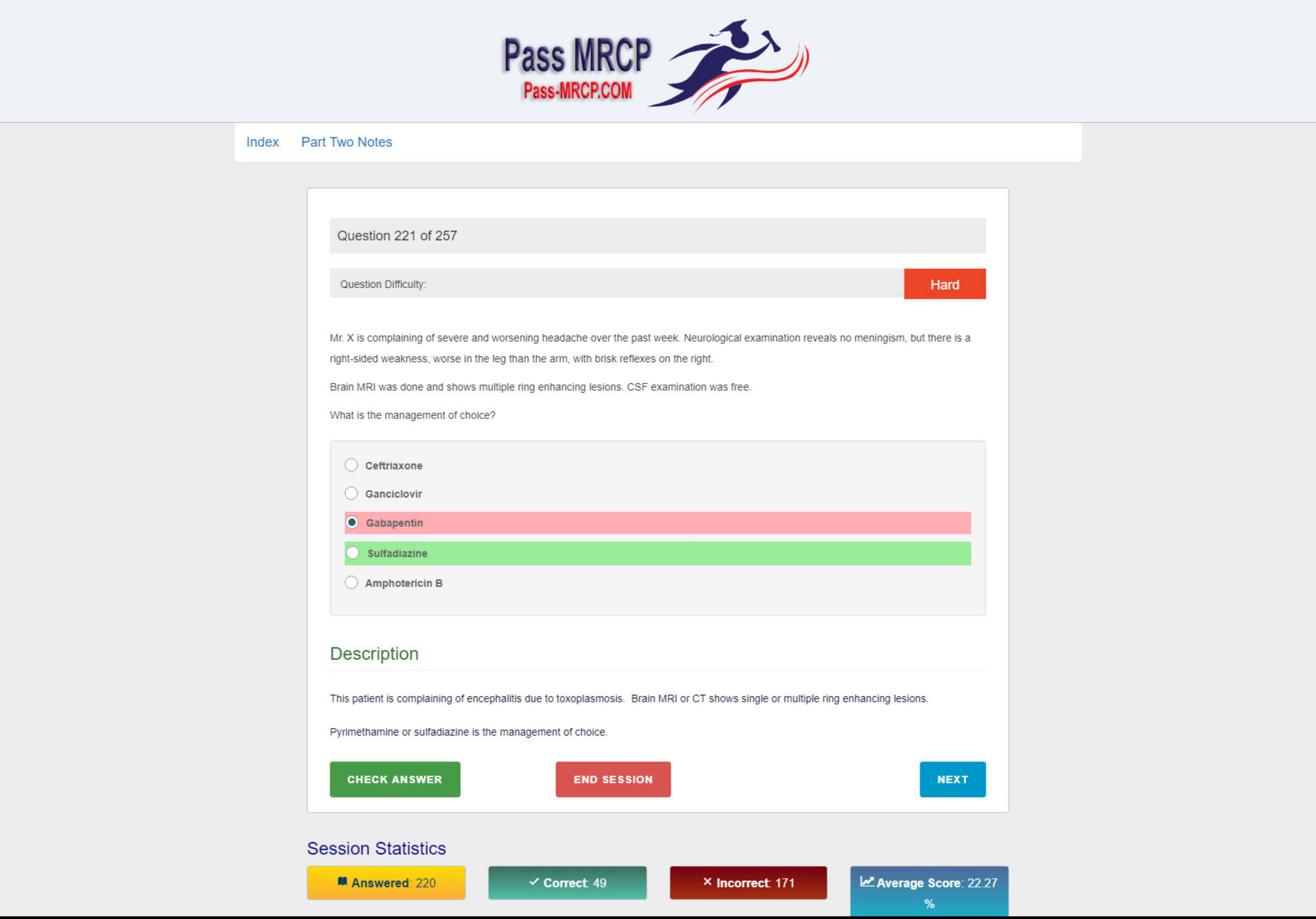
Description

This patient has Myasthenia gravis. Anti-acetylcholine receptor (AChR) antibody and anti-muscle-specific kinase (MuSK) antibody test are diagnostic with specificity up to 100%. Tensilon test by IV edrophonium shows temporarily reduced muscle weakness.

Anticholinesterase (AchE) inhibitor (Pyridostigmine) is the management of choice for Myasthenia gravis but IV immune globulin or plasmapheresis is used for severe cases.

Session Statistics

Answered: 219
✓ Correct: 49
× Incorrect: 170
Average Score: 22.37 %



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Question Difficulty: **Hard**

Mr. X is complaining of severe and worsening headache over the past week. Neurological examination reveals no meningism, but there is a right-sided weakness, worse in the leg than the arm, with brisk reflexes on the right.

Brain MRI was done and shows multiple ring enhancing lesions. CSF examination was free.

What is the management of choice?

○ **Ceftriaxone**
○ **Ganciclovir**
● **Gabapentin**
○ **Sulfadiazine**
○ **Amphotericin B**

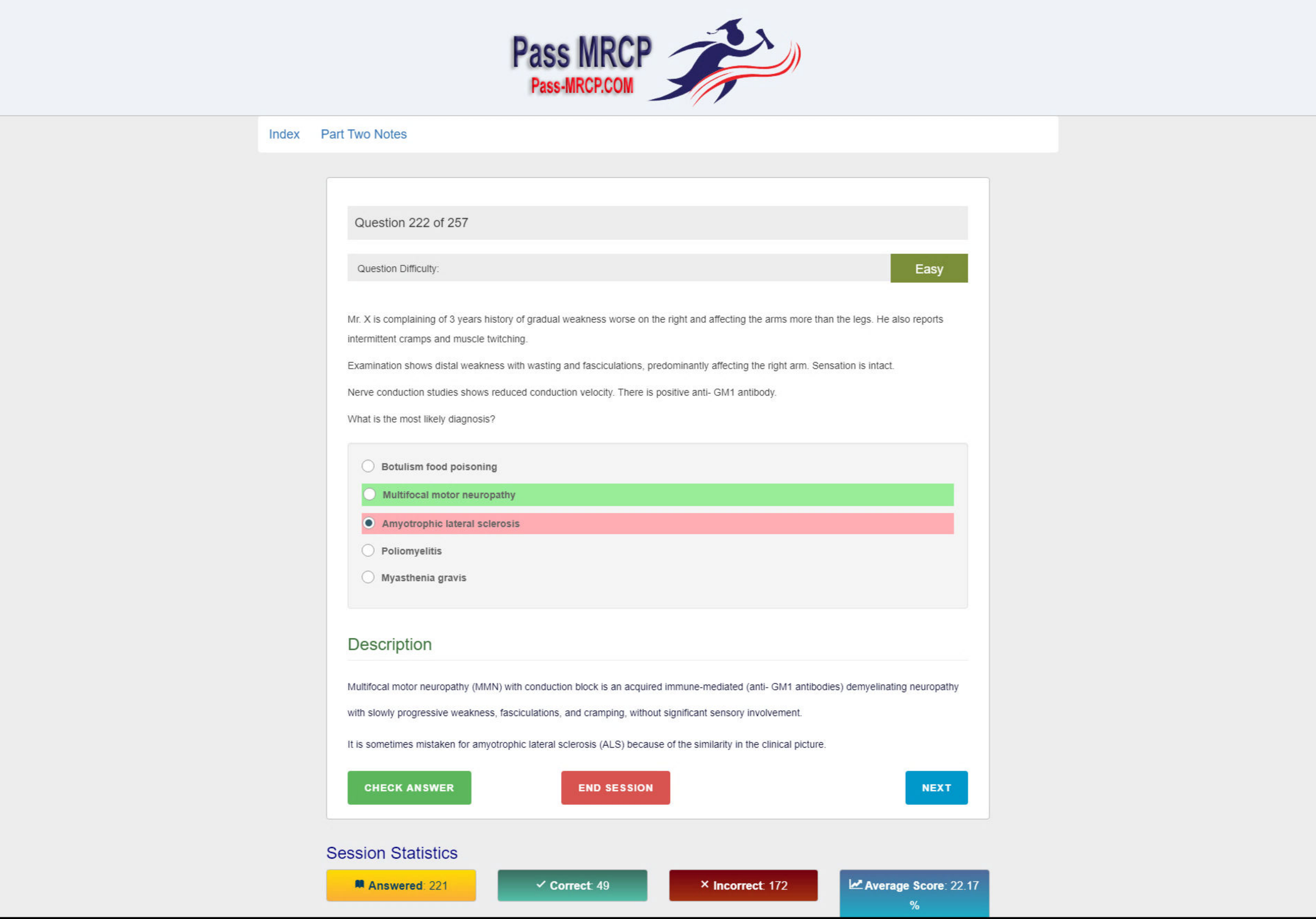
Description

This patient is complaining of encephalitis due to toxoplasmosis. Brain MRI or CT shows single or multiple ring enhancing lesions.

Pyrimethamine or sulfadiazine is the management of choice.

Session Statistics

Answered: 220
✓ **Correct**: 49
✕ **Incorrect**: 171
Average Score: 22.27 %



Question 222 of 257

Question Difficulty: Easy

Mr. X is complaining of 3 years history of gradual weakness worse on the right and affecting the arms more than the legs. He also reports intermittent cramps and muscle twitching.

Examination shows distal weakness with wasting and fasciculations, predominantly affecting the right arm. Sensation is intact.

Nerve conduction studies shows reduced conduction velocity. There is positive anti- GM1 antibody.

What is the most likely diagnosis?

- ○ **Botulism food poisoning**
- ○ **Multifocal motor neuropathy**
- ● **Amyotrophic lateral sclerosis**
- ○ **Poliomyelitis**
- ○ **Myasthenia gravis**

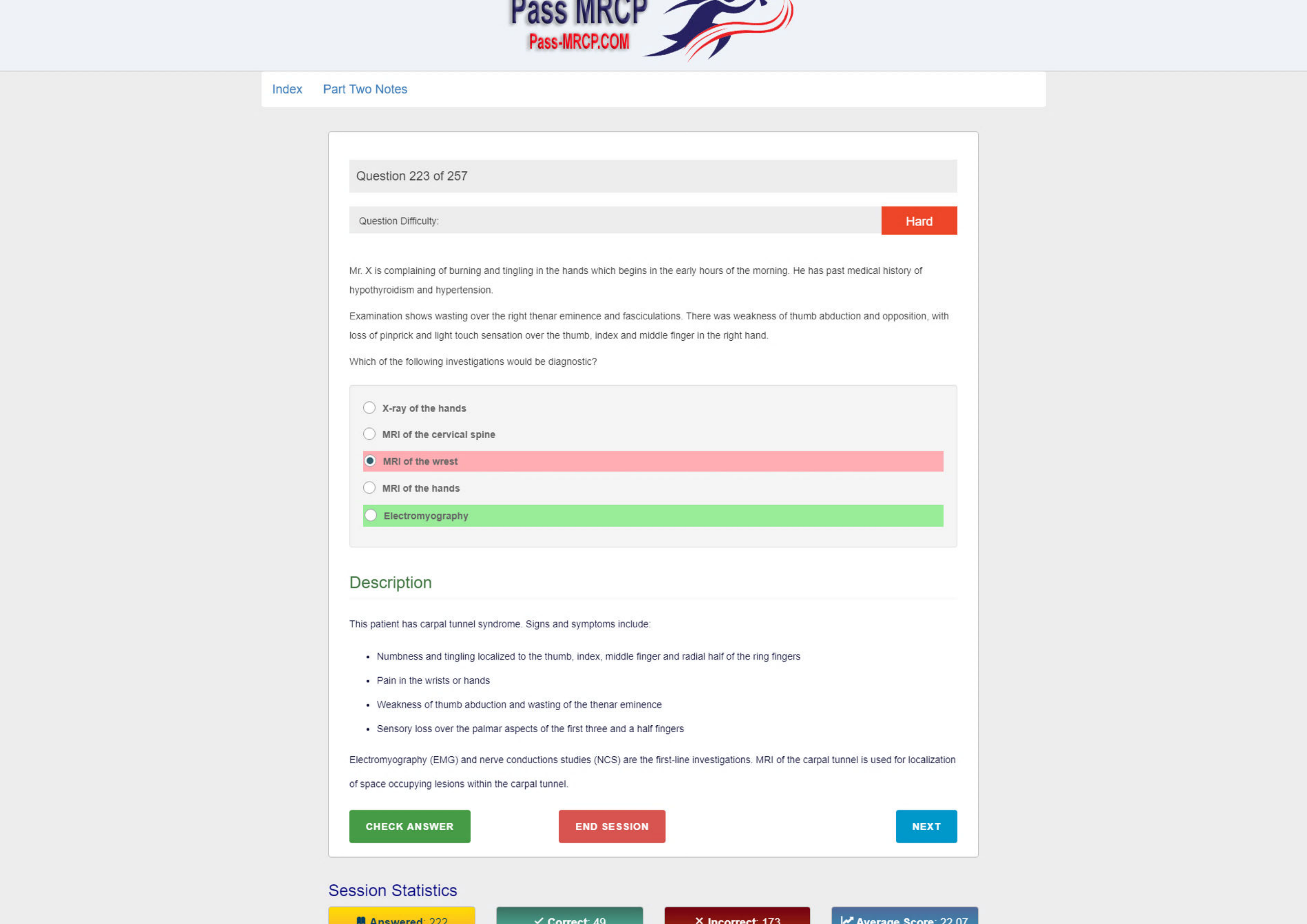
Description

Multifocal motor neuropathy (MMN) with conduction block is an acquired immune-mediated (anti- GM1 antibodies) demyelinating neuropathy with slowly progressive weakness, fasciculations, and cramping, without significant sensory involvement.

It is sometimes mistaken for amyotrophic lateral sclerosis (ALS) because of the similarity in the clinical picture.

Session Statistics

Answered: 221
✓ **Correct**: 49
✕ **Incorrect**: 172
Average Score: 22.17 %



Question 223 of 257

Question Difficulty: Hard

Mr. X is complaining of burning and tingling in the hands which begins in the early hours of the morning. He has past medical history of hypothyroidism and hypertension.

Examination shows wasting over the right thenar eminence and fasciculations. There was weakness of thumb abduction and opposition, with loss of pinprick and light touch sensation over the thumb, index and middle finger in the right hand.

Which of the following investigations would be diagnostic?

○ **X-ray of the hands**
○ **MRI of the cervical spine**
● **MRI of the wrest**
○ **MRI of the hands**
○ **Electromyography**

Description

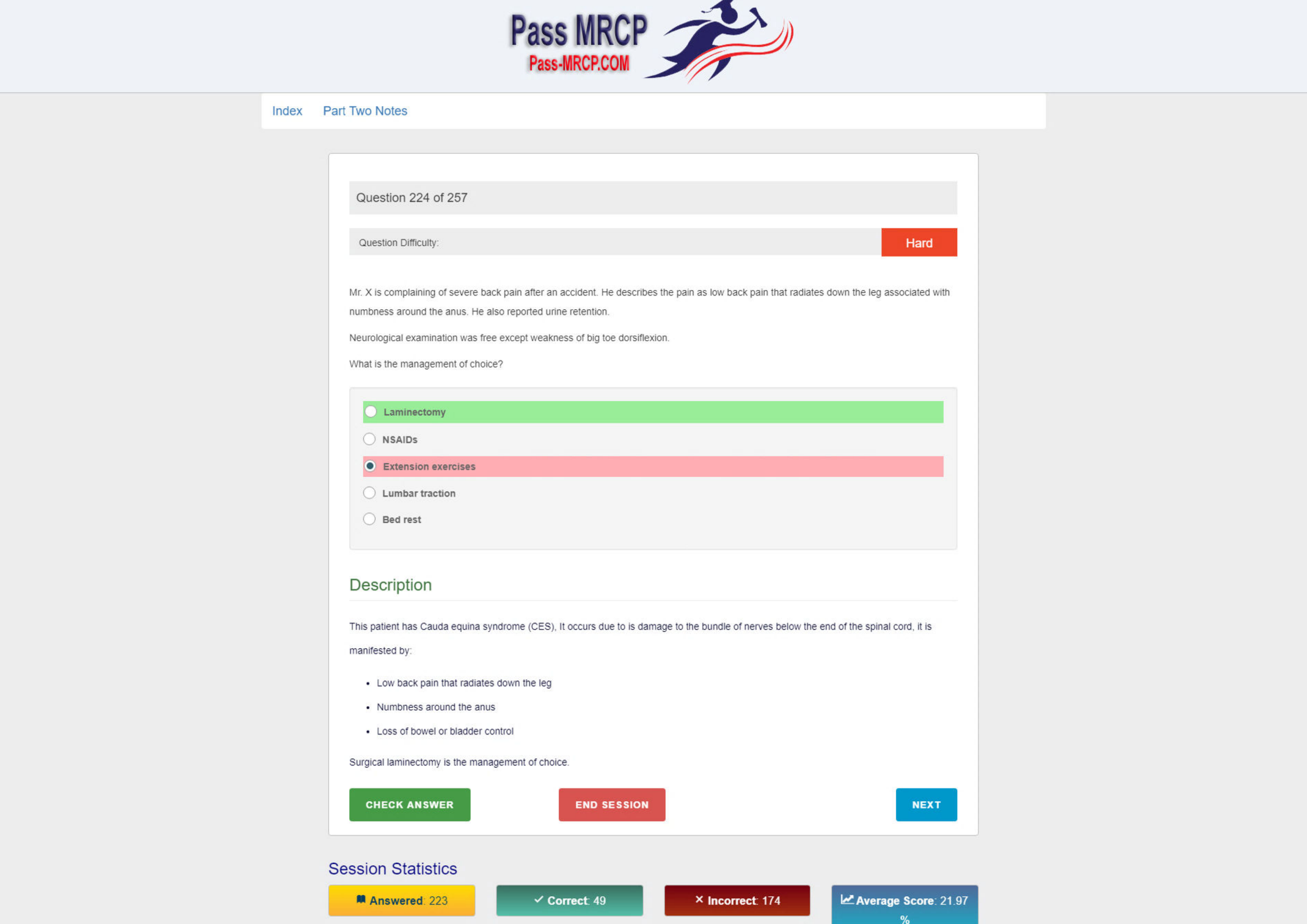
This patient has carpal tunnel syndrome. Signs and symptoms include:

- Numbness and tingling localized to the thumb, index, middle finger and radial half of the ring fingers
- Pain in the wrists or hands
- Weakness of thumb abduction and wasting of the thenar eminence
- Sensory loss over the palmar aspects of the first three and a half fingers

Electromyography (EMG) and nerve conductions studies (NCS) are the first-line investigations. MRI of the carpal tunnel is used for localization of space occupying lesions within the carpal tunnel.

Session Statistics

Answered: 222
✓ Correct: 49
✕ Incorrect: 173
Average Score: 22.07



Question 224 of 257

Question Difficulty: Hard

Mr. X is complaining of severe back pain after an accident. He describes the pain as low back pain that radiates down the leg associated with numbness around the anus. He also reported urine retention.

Neurological examination was free except weakness of big toe dorsiflexion.

What is the management of choice?

○ Laminectomy
○ NSAIDs
● Extension exercises
○ Lumbar traction
○ Bed rest

Description

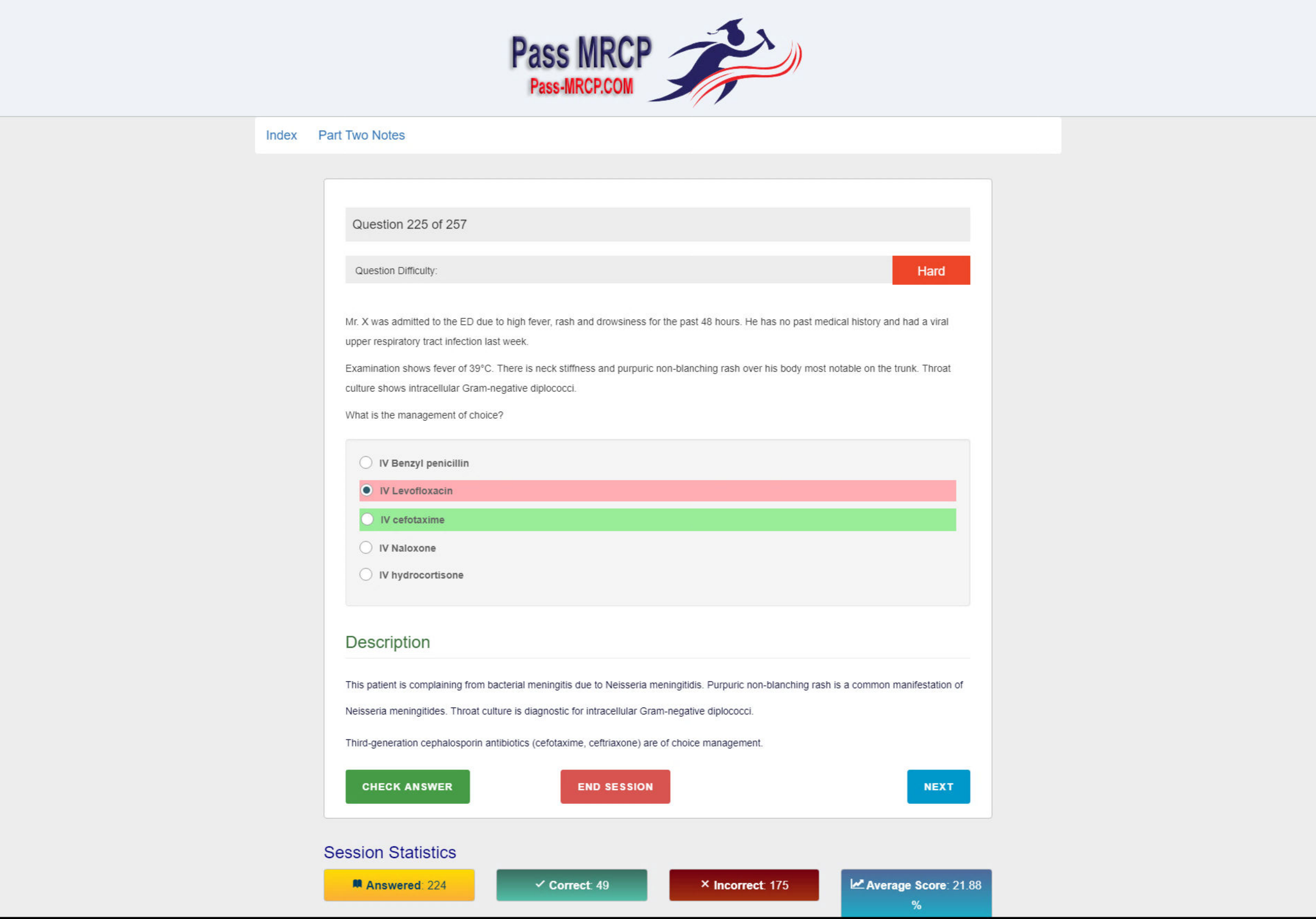
This patient has Cauda equina syndrome (CES), It occurs due to is damage to the bundle of nerves below the end of the spinal cord, it is manifested by:

- Low back pain that radiates down the leg
- Numbness around the anus
- Loss of bowel or bladder control

Surgical laminectomy is the management of choice.

Session Statistics

Answered: 223
✓ Correct: 49
✕ Incorrect: 174
Average Score: 21.97 %



Question 225 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to high fever, rash and drowsiness for the past 48 hours. He has no past medical history and had a viral upper respiratory tract infection last week.

Examination shows fever of 39°C. There is neck stiffness and purpuric non-blanching rash over his body most notable on the trunk. Throat culture shows intracellular Gram-negative diplococci.

What is the management of choice?

- ○ **IV Benzyl penicillin**
- ● **IV Levofloxacin**
- ○ **IV cefotaxime**
- ○ **IV Naloxone**
- ○ **IV hydrocortisone**

Description

This patient is complaining from bacterial meningitis due to Neisseria meningitidis. Purpuric non-blanching rash is a common manifestation of Neisseria meningitides. Throat culture is diagnostic for intracellular Gram-negative diplococci.

Third-generation cephalosporin antibiotics (cefotaxime, ceftriaxone) are of choice management.

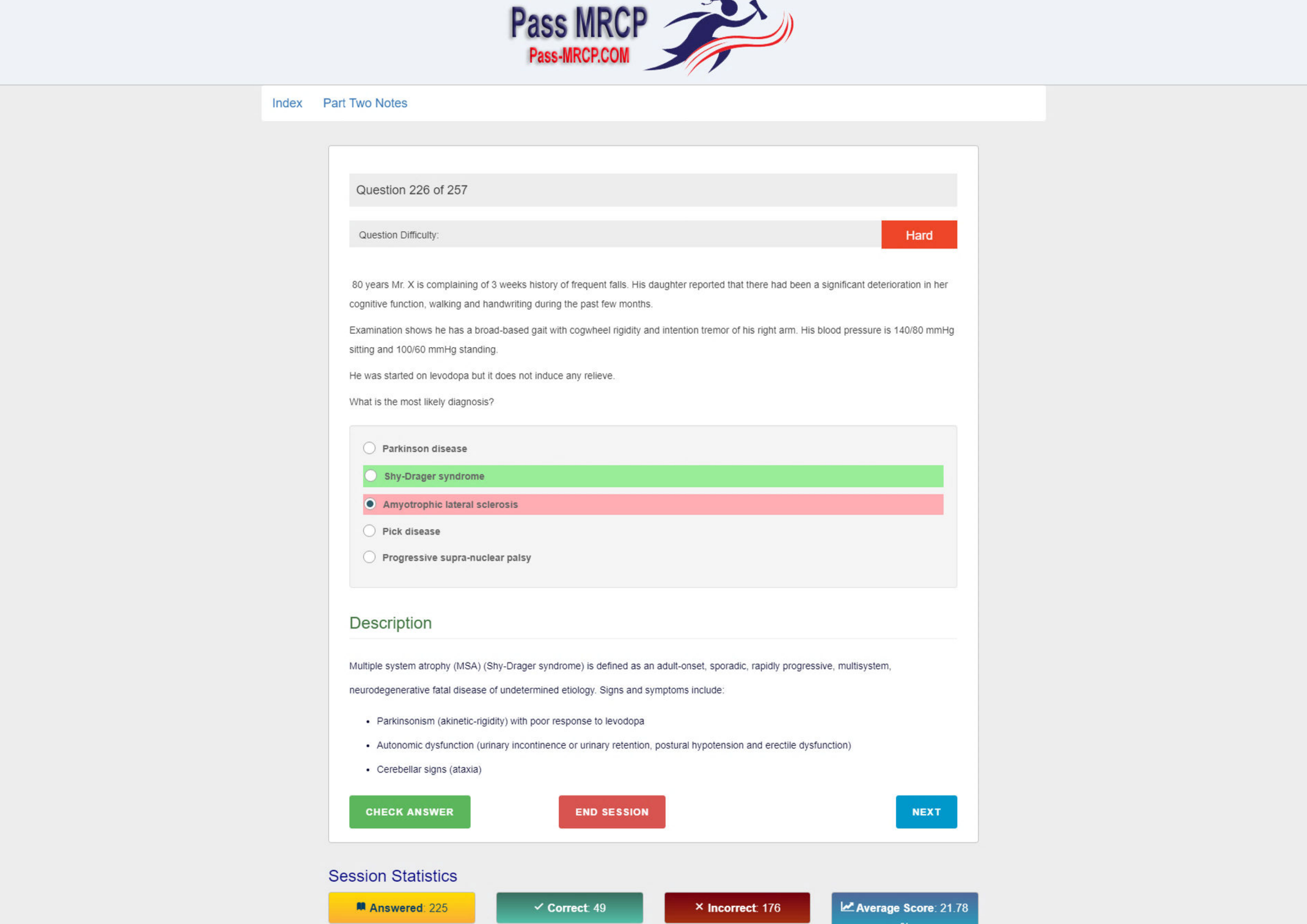
Session Statistics

Answered: 224

✓ **Correct**: 49

✕ **Incorrect**: 175

Average Score: 21.88 %



Question 226 of 257

Question Difficulty: **Hard**

80 years Mr. X is complaining of 3 weeks history of frequent falls. His daughter reported that there had been a significant deterioration in her cognitive function, walking and handwriting during the past few months.

Examination shows he has a broad-based gait with cogwheel rigidity and intention tremor of his right arm. His blood pressure is 140/80 mmHg sitting and 100/60 mmHg standing.

He was started on levodopa but it does not induce any relieve.

What is the most likely diagnosis?

○ **Parkinson disease**

○ **Shy-Drager syndrome**

● **Amyotrophic lateral sclerosis**

○ **Pick disease**

○ **Progressive supra-nuclear palsy**

Description

Multiple system atrophy (MSA) (Shy-Drager syndrome) is defined as an adult-onset, sporadic, rapidly progressive, multisystem, neurodegenerative fatal disease of undetermined etiology. Signs and symptoms include:

- Parkinsonism (akinetic-rigidity) with poor response to levodopa
- Autonomic dysfunction (urinary incontinence or urinary retention, postural hypotension and erectile dysfunction)
- Cerebellar signs (ataxia)

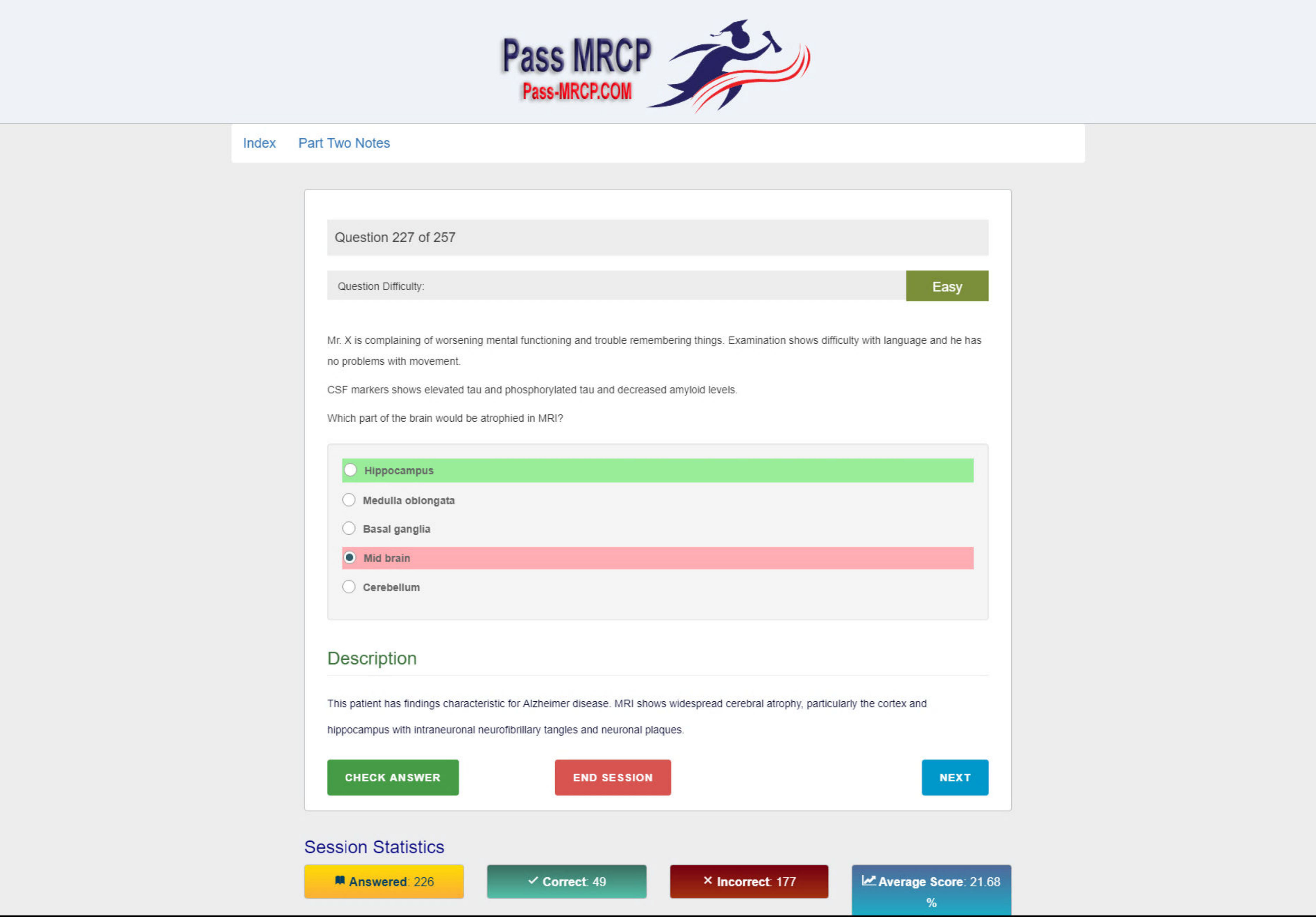
Session Statistics

Answered: 225

✓ **Correct**: 49

✕ **Incorrect**: 176

Average Score: 21.78



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Question 227 of 257

Question Difficulty: Easy

Mr. X is complaining of worsening mental functioning and trouble remembering things. Examination shows difficulty with language and he has no problems with movement.

CSF markers shows elevated tau and phosphorylated tau and decreased amyloid levels.

Which part of the brain would be atrophied in MRI?

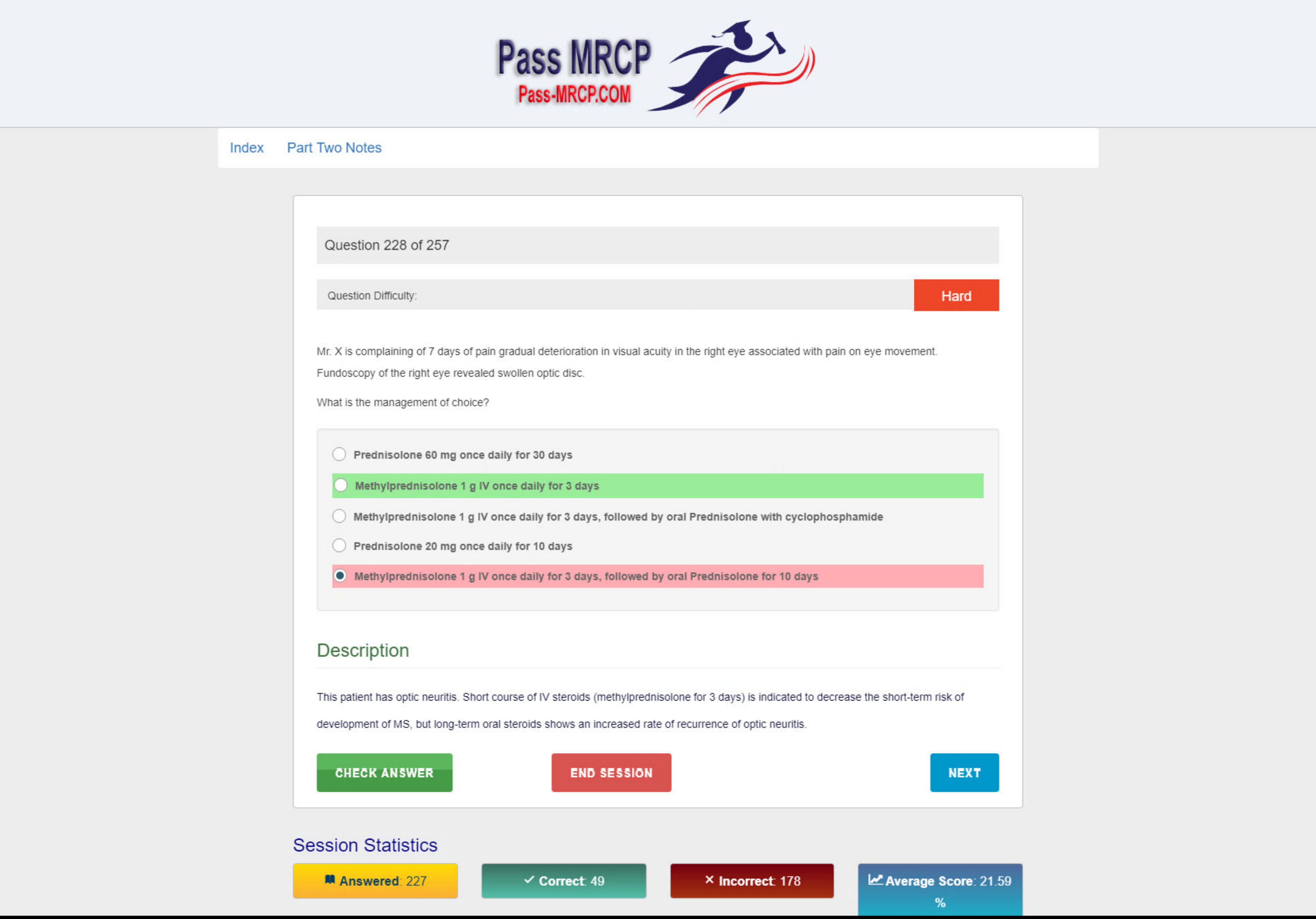
○ Hippocampus
○ Medulla oblongata
○ Basal ganglia
● Mid brain
○ Cerebellum

Description

This patient has findings characteristic for Alzheimer disease. MRI shows widespread cerebral atrophy, particularly the cortex and hippocampus with intraneuronal neurofibrillary tangles and neuronal plaques.

Session Statistics

Answered: 226
✓ Correct: 49
× Incorrect: 177
Average Score: 21.68 %



Question 228 of 257

Question Difficulty: **Hard**

Mr. X is complaining of 7 days of pain gradual deterioration in visual acuity in the right eye associated with pain on eye movement. Fundoscopy of the right eye revealed swollen optic disc.

What is the management of choice?

- ○ **Prednisolone 60 mg once daily for 30 days**
- ○ **Methylprednisolone 1 g IV once daily for 3 days**
- ○ **Methylprednisolone 1 g IV once daily for 3 days, followed by oral Prednisolone with cyclophosphamide**
- ○ **Prednisolone 20 mg once daily for 10 days**
- ● **Methylprednisolone 1 g IV once daily for 3 days, followed by oral Prednisolone for 10 days**

Description

This patient has optic neuritis. Short course of IV steroids (methylprednisolone for 3 days) is indicated to decrease the short-term risk of development of MS, but long-term oral steroids shows an increased rate of recurrence of optic neuritis.

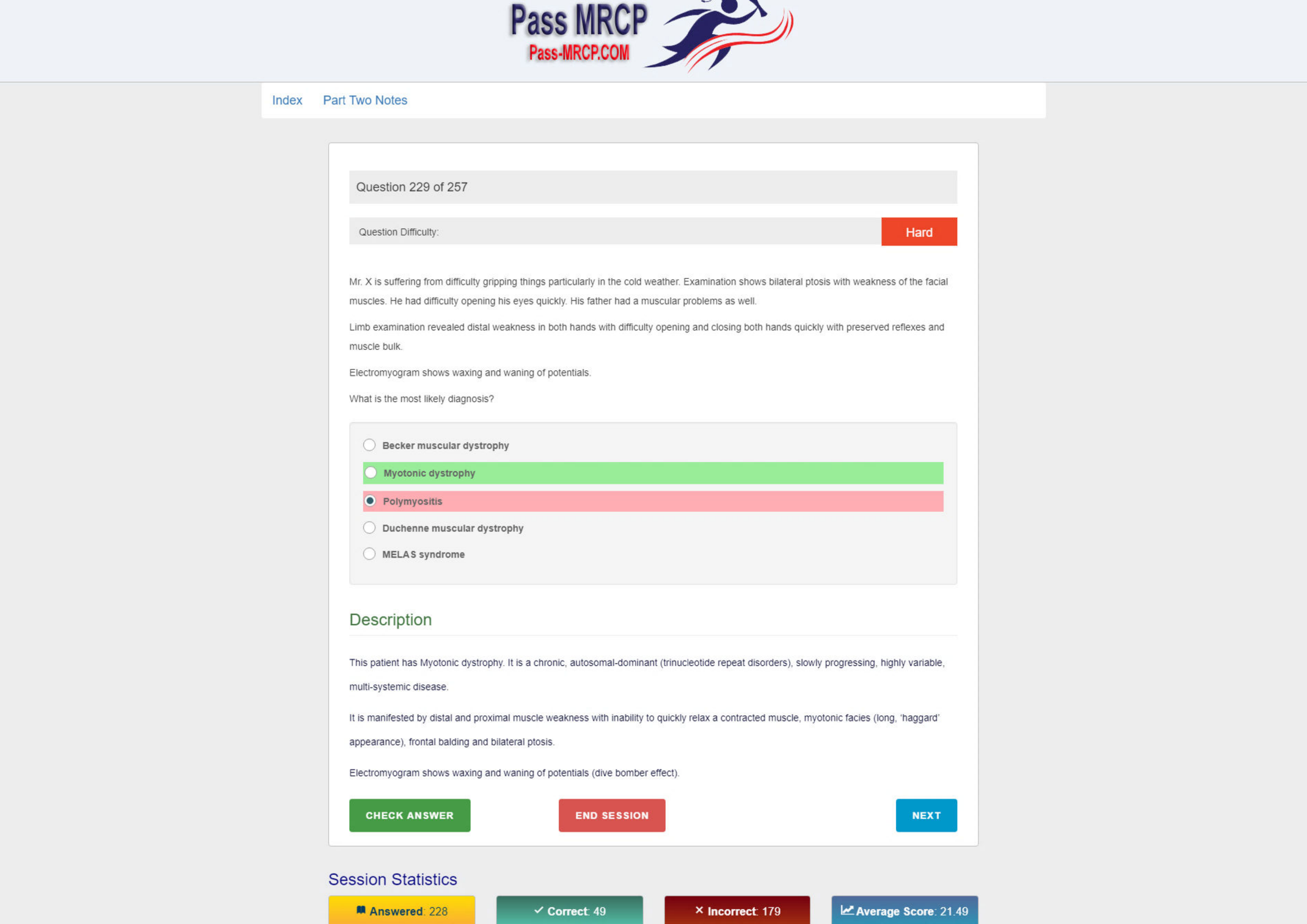
Session Statistics

Answered: 227

✓ **Correct**: 49

✕ **Incorrect**: 178

Average Score: 21.59 %



Question 229 of 257

Question Difficulty: Hard

Mr. X is suffering from difficulty gripping things particularly in the cold weather. Examination shows bilateral ptosis with weakness of the facial muscles. He had difficulty opening his eyes quickly. His father had a muscular problems as well.

Limb examination revealed distal weakness in both hands with difficulty opening and closing both hands quickly with preserved reflexes and muscle bulk.

Electromyogram shows waxing and waning of potentials.

What is the most likely diagnosis?

○ **Becker muscular dystrophy**
○ **Myotonic dystrophy**
● **Polymyositis**
○ **Duchenne muscular dystrophy**
○ **MELAS syndrome**

Description

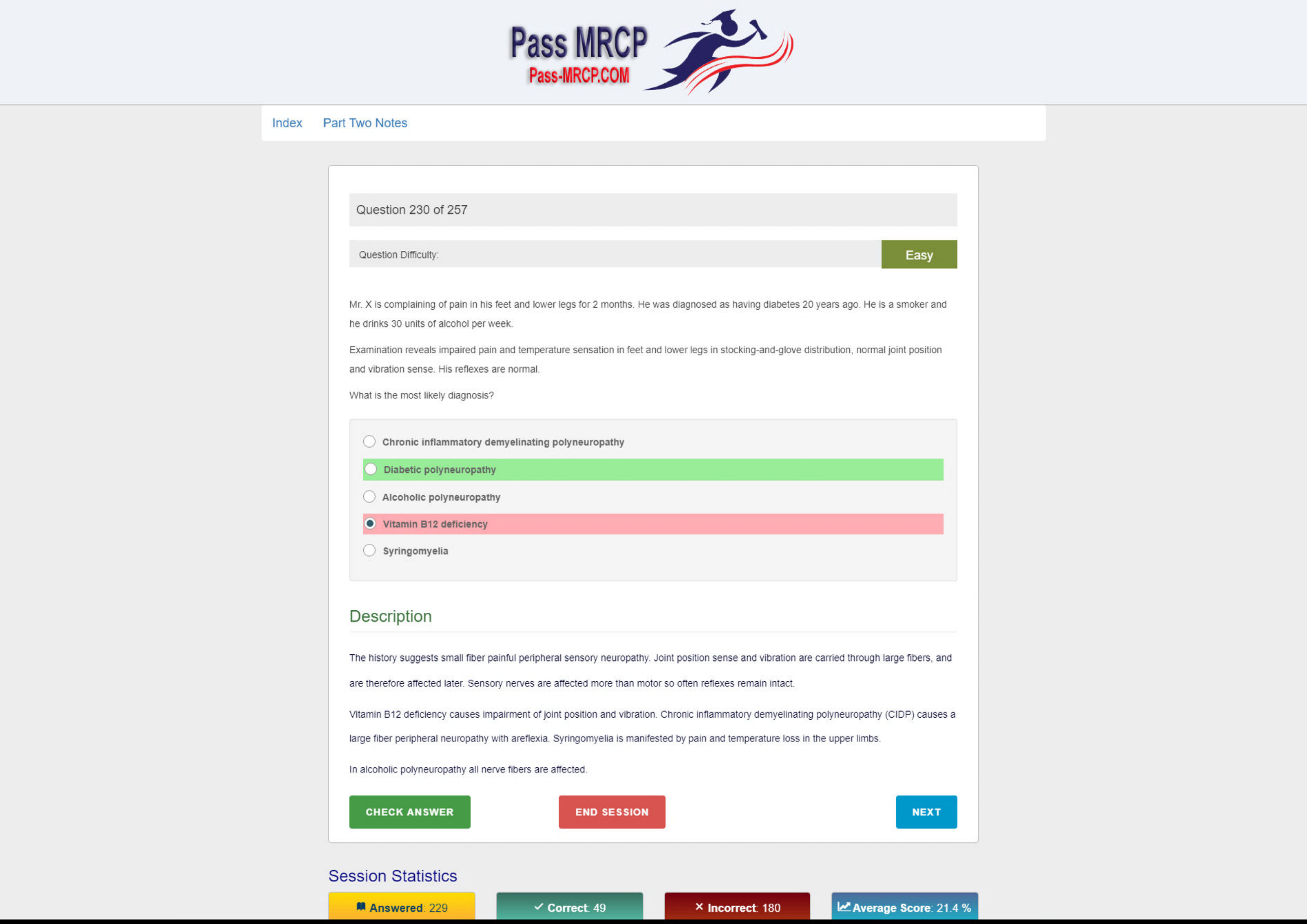
This patient has Myotonic dystrophy. It is a chronic, autosomal-dominant (trinucleotide repeat disorders), slowly progressing, highly variable, multi-systemic disease.

It is manifested by distal and proximal muscle weakness with inability to quickly relax a contracted muscle, myotonic facies (long, 'haggard' appearance), frontal balding and bilateral ptosis.

Electromyogram shows waxing and waning of potentials (dive bomber effect).

Session Statistics

Answered: 228
✓ **Correct**: 49
✕ **Incorrect**: 179
Average Score: 21.49



Question 230 of 257

Question Difficulty: Easy

Mr. X is complaining of pain in his feet and lower legs for 2 months. He was diagnosed as having diabetes 20 years ago. He is a smoker and he drinks 30 units of alcohol per week.

Examination reveals impaired pain and temperature sensation in feet and lower legs in stocking-and-glove distribution, normal joint position and vibration sense. His reflexes are normal.

What is the most likely diagnosis?

- ○ **Chronic inflammatory demyelinating polyneuropathy**
- ○ **Diabetic polyneuropathy**
- ○ **Alcoholic polyneuropathy**
- ● **Vitamin B12 deficiency**
- ○ **Syringomyelia**

Description

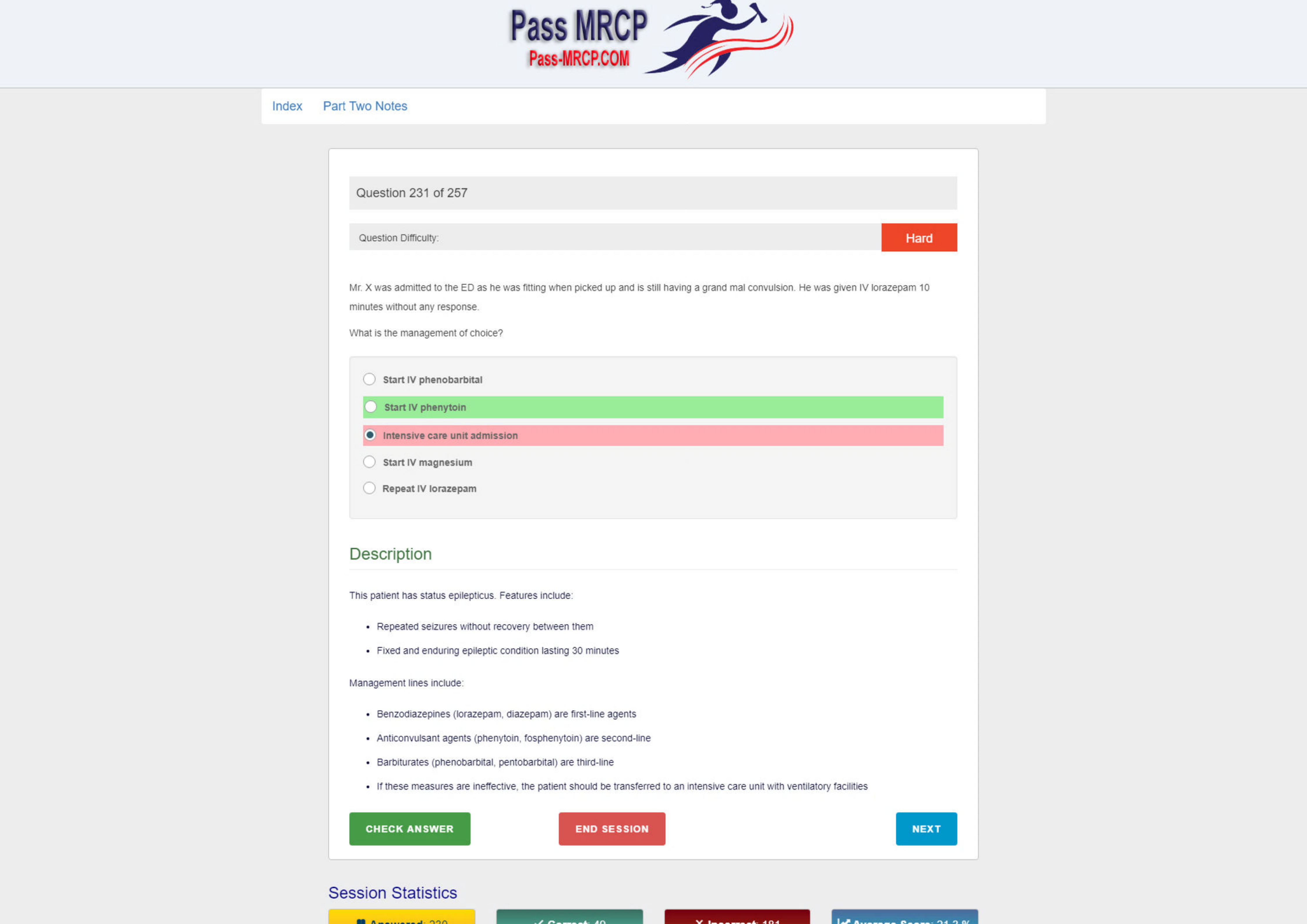
The history suggests small fiber painful peripheral sensory neuropathy. Joint position sense and vibration are carried through large fibers, and are therefore affected later. Sensory nerves are affected more than motor so often reflexes remain intact.

Vitamin B12 deficiency causes impairment of joint position and vibration. Chronic inflammatory demyelinating polyneuropathy (CIDP) causes a large fiber peripheral neuropathy with areflexia. Syringomyelia is manifested by pain and temperature loss in the upper limbs.

In alcoholic polyneuropathy all nerve fibers are affected.

Session Statistics

Answered: 229
✓ **Correct**: 49
✕ **Incorrect**: 180
Average Score: 21.4 %



Question 231 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED as he was fitting when picked up and is still having a grand mal convulsion. He was given IV lorazepam 10 minutes without any response.

What is the management of choice?

○ **Start IV phenobarbital**
○ **Start IV phenytoin**
● **Intensive care unit admission**
○ **Start IV magnesium**
○ **Repeat IV lorazepam**

Description

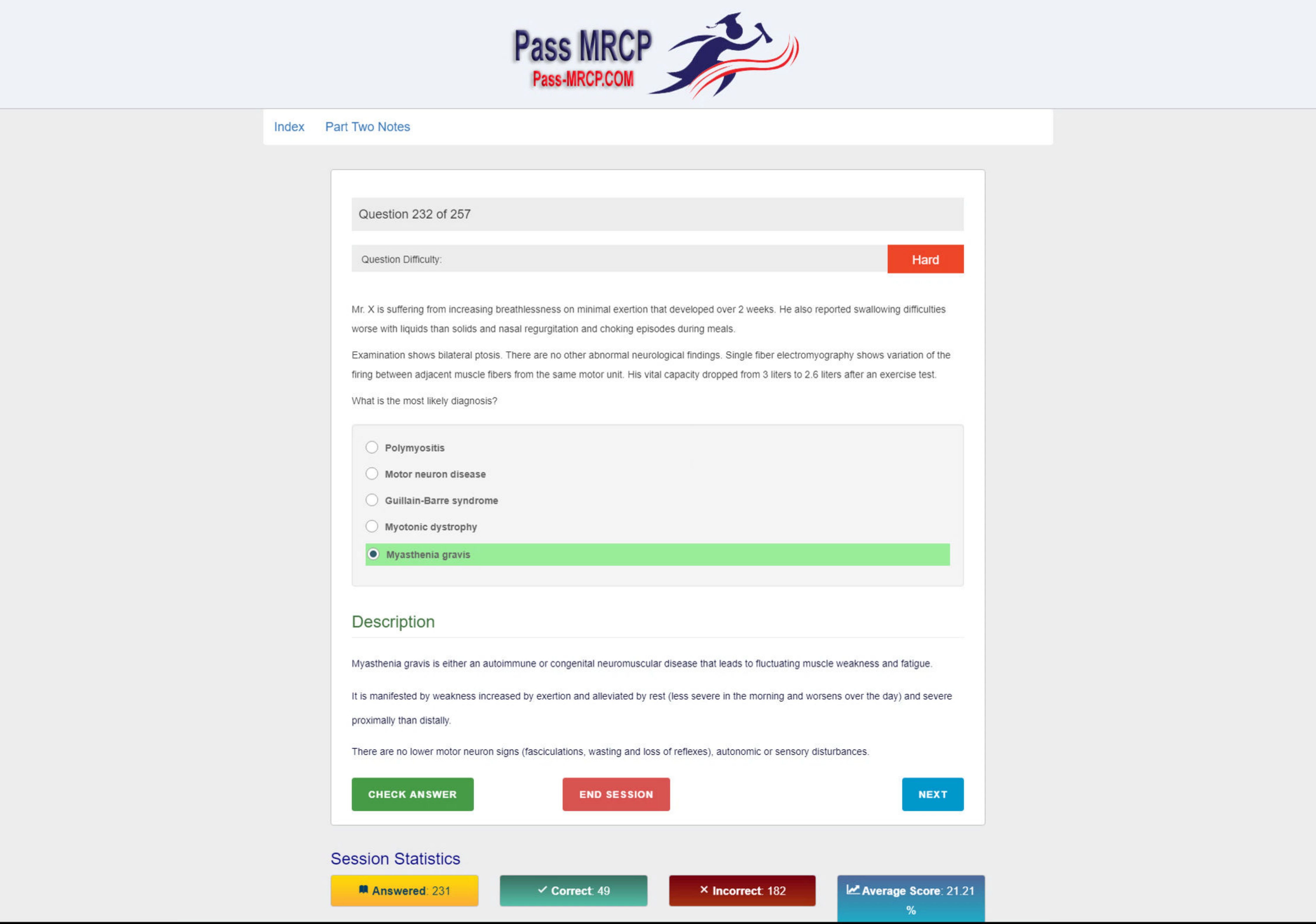
This patient has status epilepticus. Features include:

- Repeated seizures without recovery between them
- Fixed and enduring epileptic condition lasting 30 minutes

Management lines include:

- Benzodiazepines (lorazepam, diazepam) are first-line agents
- Anticonvulsant agents (phenytoin, fosphenytoin) are second-line
- Barbiturates (phenobarbital, pentobarbital) are third-line
- If these measures are ineffective, the patient should be transferred to an intensive care unit with ventilatory facilities

Session Statistics



Question 232 of 257

Question Difficulty: Hard

Mr. X is suffering from increasing breathlessness on minimal exertion that developed over 2 weeks. He also reported swallowing difficulties worse with liquids than solids and nasal regurgitation and choking episodes during meals.

Examination shows bilateral ptosis. There are no other abnormal neurological findings. Single fiber electromyography shows variation of the firing between adjacent muscle fibers from the same motor unit. His vital capacity dropped from 3 liters to 2.6 liters after an exercise test.

What is the most likely diagnosis?

- ○ **Polymyositis**
- ○ **Motor neuron disease**
- ○ **Guillain-Barre syndrome**
- ○ **Myotonic dystrophy**
- ● **Myasthenia gravis**

Description

Myasthenia gravis is either an autoimmune or congenital neuromuscular disease that leads to fluctuating muscle weakness and fatigue.

It is manifested by weakness increased by exertion and alleviated by rest (less severe in the morning and worsens over the day) and severe proximally than distally.

There are no lower motor neuron signs (fasciculations, wasting and loss of reflexes), autonomic or sensory disturbances.

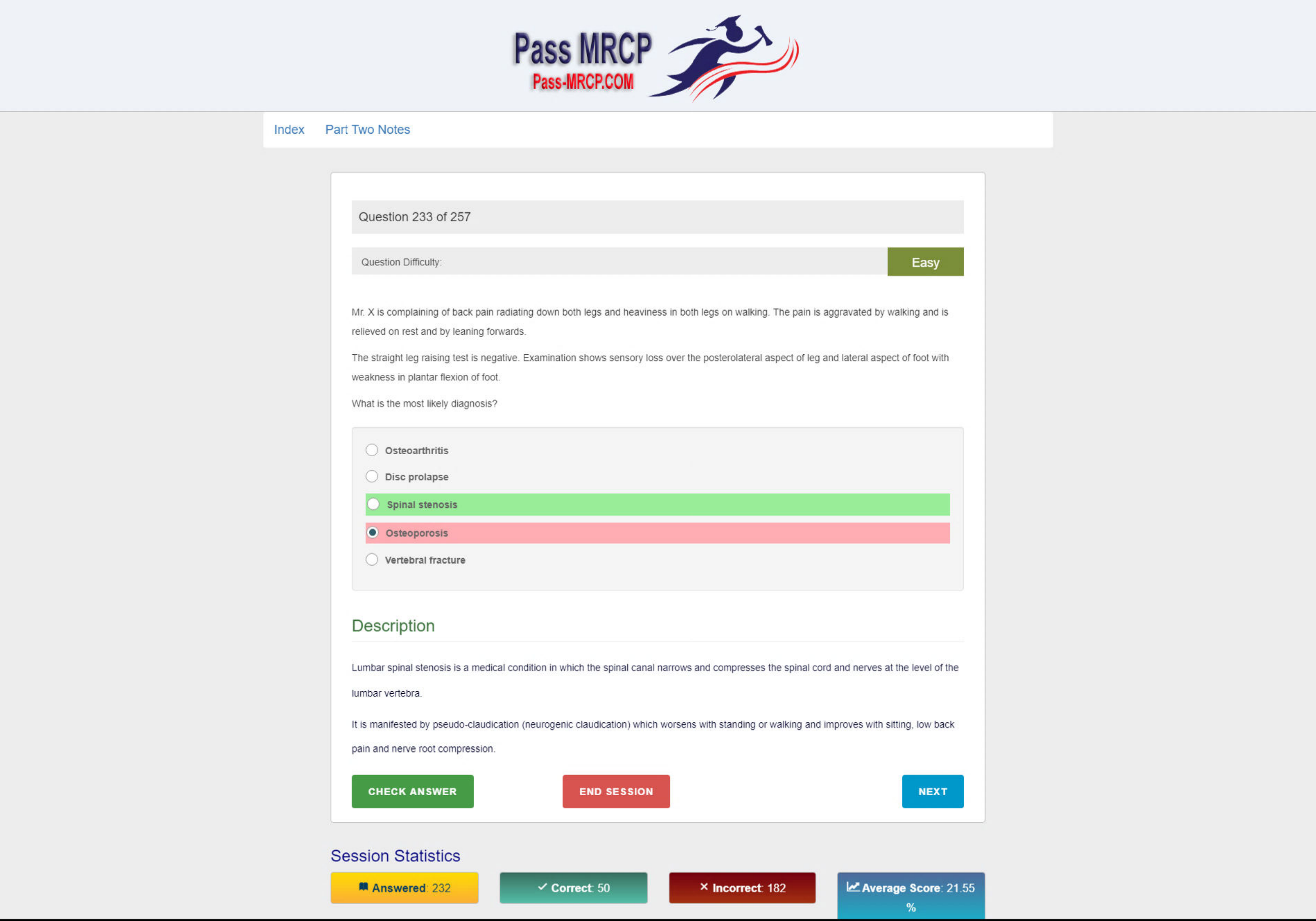
Session Statistics

Answered: 231

✓ **Correct**: 49

✕ **Incorrect**: 182

Average Score: 21.21 %



Question 233 of 257

Question Difficulty: **Easy**

Mr. X is complaining of back pain radiating down both legs and heaviness in both legs on walking. The pain is aggravated by walking and is relieved on rest and by leaning forwards.

The straight leg raising test is negative. Examination shows sensory loss over the posterolateral aspect of leg and lateral aspect of foot with weakness in plantar flexion of foot.

What is the most likely diagnosis?

- ○ **Osteoarthritis**
- ○ **Disc prolapse**
- ○ **Spinal stenosis**
- ● **Osteoporosis**
- ○ **Vertebral fracture**

Description

Lumbar spinal stenosis is a medical condition in which the spinal canal narrows and compresses the spinal cord and nerves at the level of the lumbar vertebra.

It is manifested by pseudo-claudication (neurogenic claudication) which worsens with standing or walking and improves with sitting, low back pain and nerve root compression.

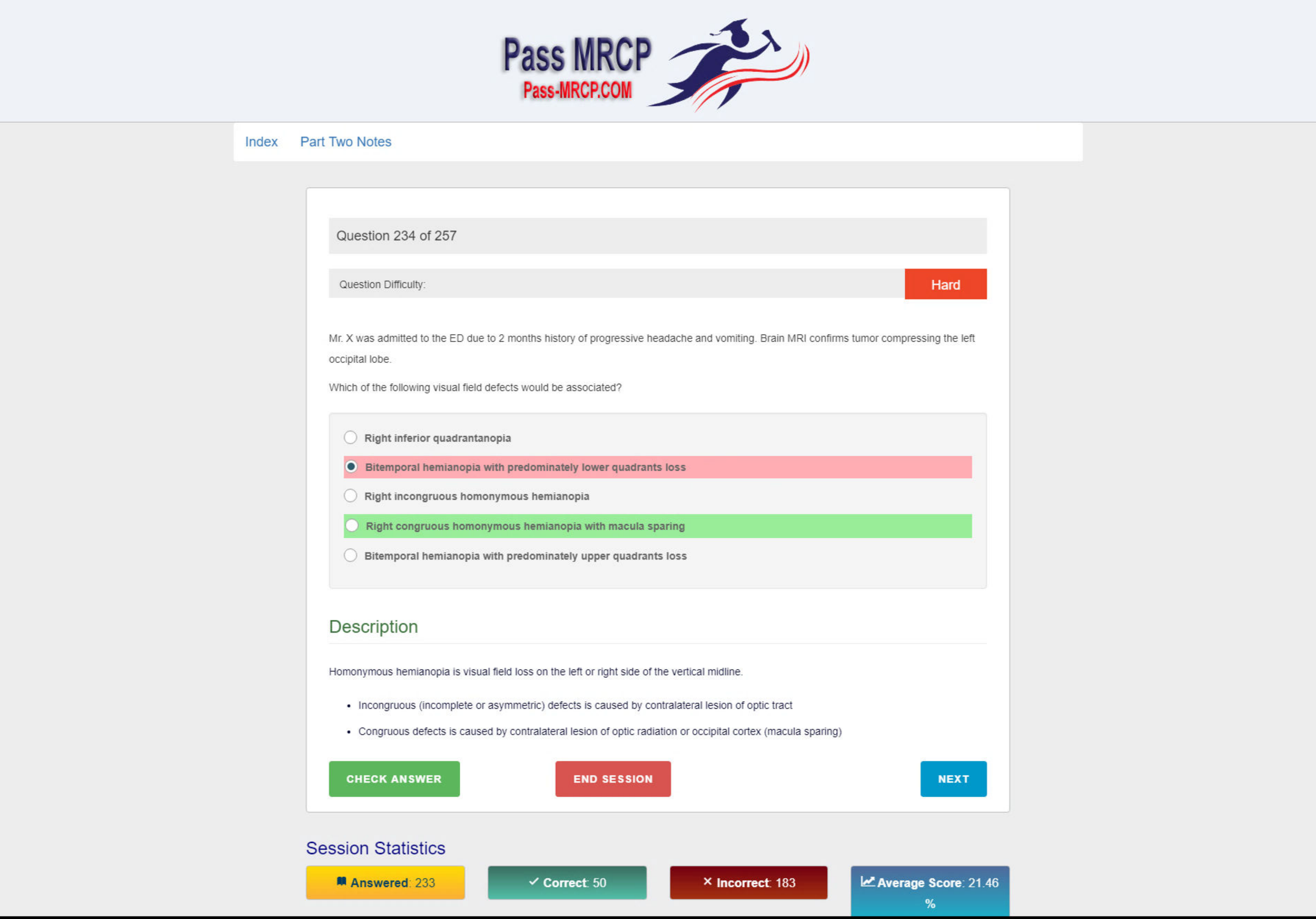
Session Statistics

Answered: 232

✓ **Correct**: 50

✕ **Incorrect**: 182

Average Score: 21.55 %



Question 234 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to 2 months history of progressive headache and vomiting. Brain MRI confirms tumor compressing the left occipital lobe.

Which of the following visual field defects would be associated?

○ Right inferior quadrantanopia
● Bitemporal hemianopia with predominately lower quadrants loss
○ Right incongruous homonymous hemianopia
○ Right congruous homonymous hemianopia with macula sparing
○ Bitemporal hemianopia with predominately upper quadrants loss

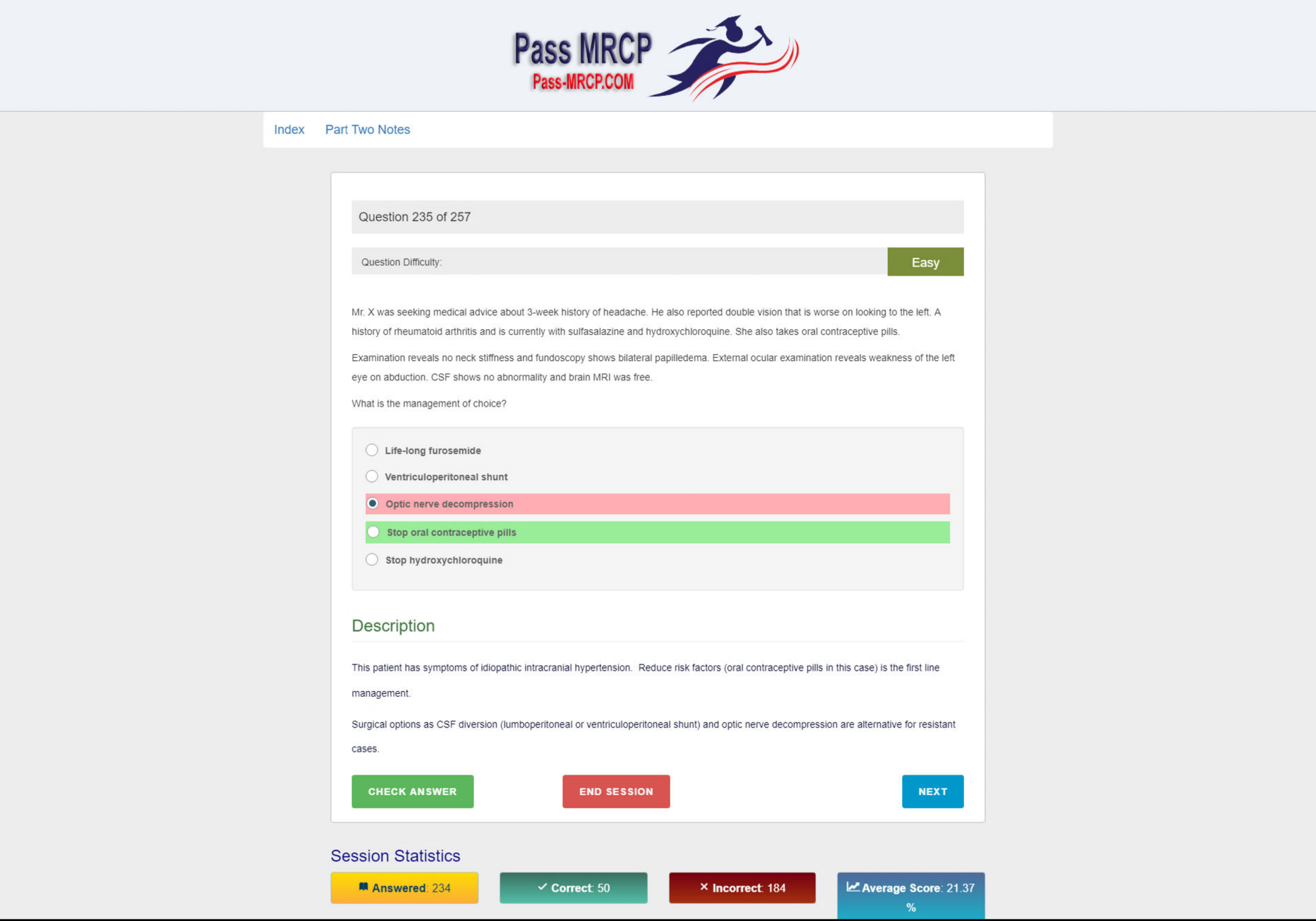
Description

Homonymous hemianopia is visual field loss on the left or right side of the vertical midline.

- Incongruous (incomplete or asymmetric) defects is caused by contralateral lesion of optic tract
- Congruous defects is caused by contralateral lesion of optic radiation or occipital cortex (macula sparing)

Session Statistics

Answered: 233
✓ **Correct**: 50
× **Incorrect**: 183
Average Score: 21.46 %



Question 235 of 257

Question Difficulty: **Easy**

Mr. X was seeking medical advice about 3-week history of headache. He also reported double vision that is worse on looking to the left. A history of rheumatoid arthritis and is currently with sulfasalazine and hydroxychloroquine. She also takes oral contraceptive pills.

Examination reveals no neck stiffness and fundoscopy shows bilateral papilledema. External ocular examination reveals weakness of the left eye on abduction. CSF shows no abnormality and brain MRI was free.

What is the management of choice?

- ○ **Life-long furosemide**
- ○ **Ventriculoperitoneal shunt**
- ● **Optic nerve decompression**
- ○ **Stop oral contraceptive pills**
- ○ **Stop hydroxychloroquine**

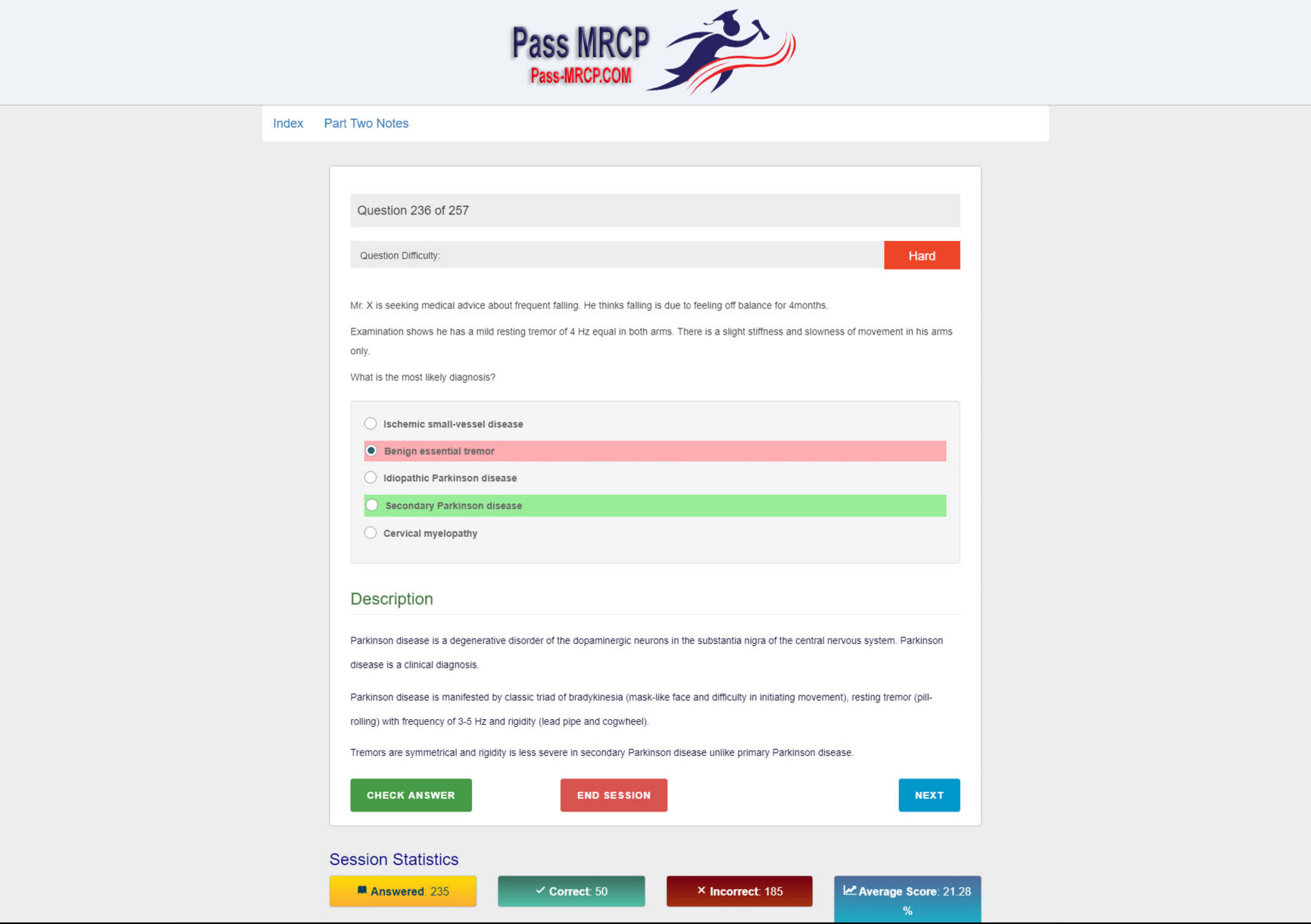
Description

This patient has symptoms of idiopathic intracranial hypertension. Reduce risk factors (oral contraceptive pills in this case) is the first line management.

Surgical options as CSF diversion (lumboperitoneal or ventriculoperitoneal shunt) and optic nerve decompression are alternative for resistant cases.

Session Statistics

Answered: 234
✓ **Correct**: 50
✕ **Incorrect**: 184
Average Score: 21.37 %



Question 236 of 257

Question Difficulty: Hard

Mr. X is seeking medical advice about frequent falling. He thinks falling is due to feeling off balance for 4months.

Examination shows he has a mild resting tremor of 4 Hz equal in both arms. There is a slight stiffness and slowness of movement in his arms only.

What is the most likely diagnosis?

- ○ **Ischemic small-vessel disease**
- ● **Benign essential tremor**
- ○ **Idiopathic Parkinson disease**
- ○ **Secondary Parkinson disease**
- ○ **Cervical myelopathy**

Description

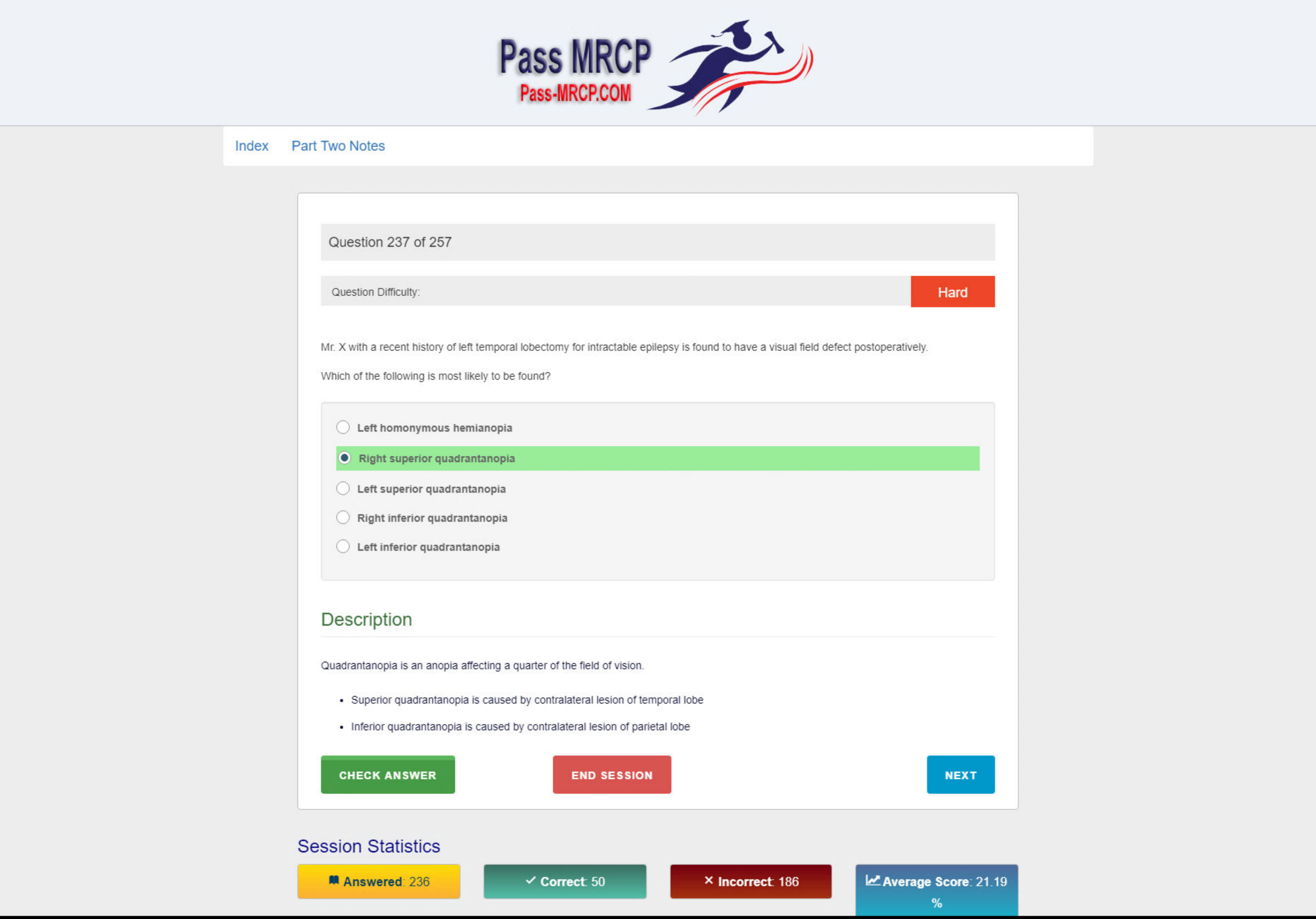
Parkinson disease is a degenerative disorder of the dopaminergic neurons in the substantia nigra of the central nervous system. Parkinson disease is a clinical diagnosis.

Parkinson disease is manifested by classic triad of bradykinesia (mask-like face and difficulty in initiating movement), resting tremor (pill-rolling) with frequency of 3-5 Hz and rigidity (lead pipe and cogwheel).

Tremors are symmetrical and rigidity is less severe in secondary Parkinson disease unlike primary Parkinson disease.

Session Statistics

Answered: 235
✓ **Correct**: 50
✕ **Incorrect**: 185
Average Score: 21.28 %



Question 237 of 257

Question Difficulty: Hard

Mr. X with a recent history of left temporal lobectomy for intractable epilepsy is found to have a visual field defect postoperatively.

Which of the following is most likely to be found?

○ Left homonymous hemianopia
● Right superior quadrantanopia
○ Left superior quadrantanopia
○ Right inferior quadrantanopia
○ Left inferior quadrantanopia

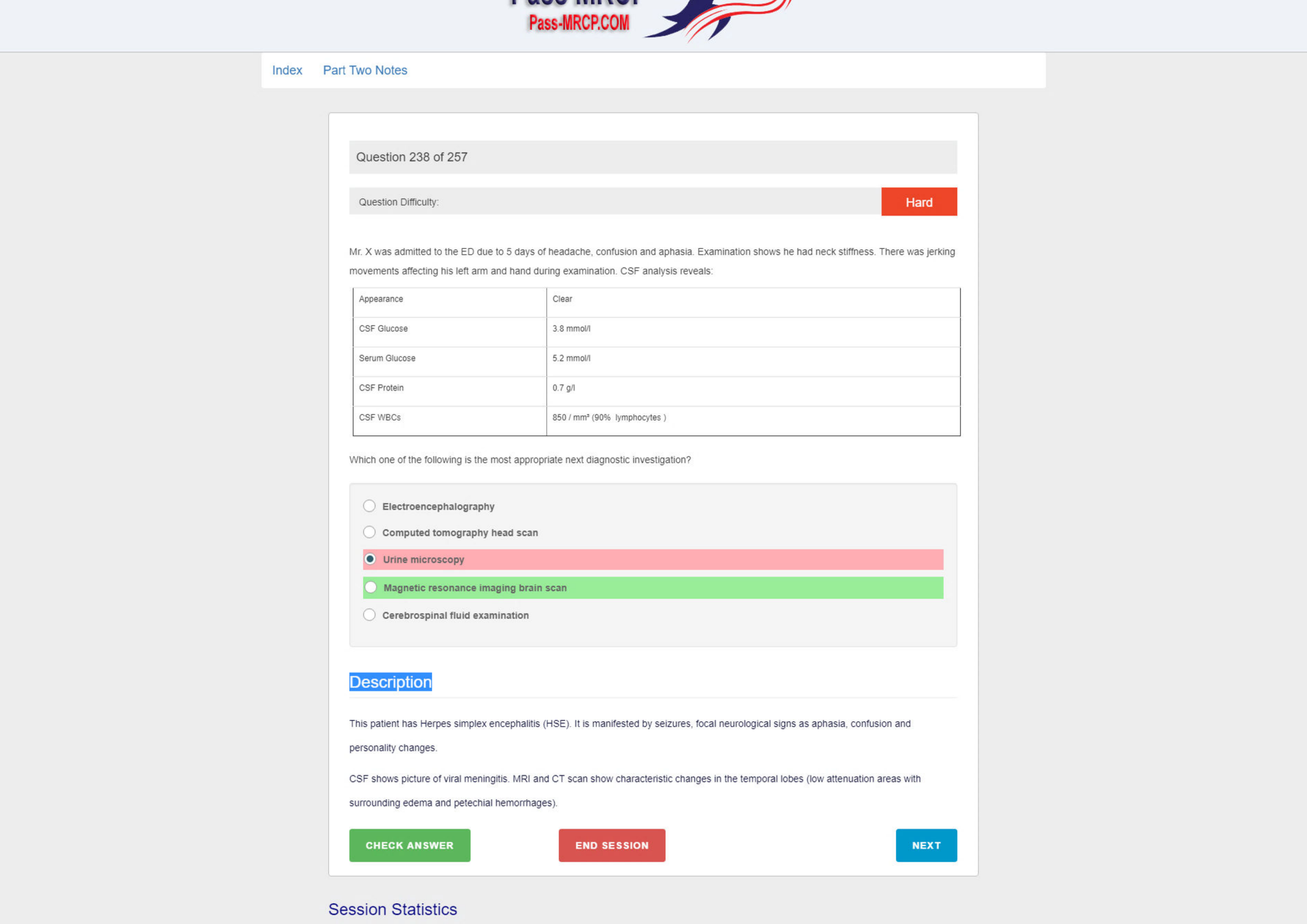
Description

Quadrantanopia is an anopia affecting a quarter of the field of vision.

- Superior quadrantanopia is caused by contralateral lesion of temporal lobe
- Inferior quadrantanopia is caused by contralateral lesion of parietal lobe

Session Statistics

Answered: 236
✓ Correct: 50
× Incorrect: 186
Average Score: 21.19 %



Question 238 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to 5 days of headache, confusion and aphasia. Examination shows he had neck stiffness. There was jerking movements affecting his left arm and hand during examination. CSF analysis reveals:

Appearance	Clear
CSF Glucose	3.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	0.7 g/l
CSF WBCs	850 / mm³ (90% lymphocytes)

Which one of the following is the most appropriate next diagnostic investigation?

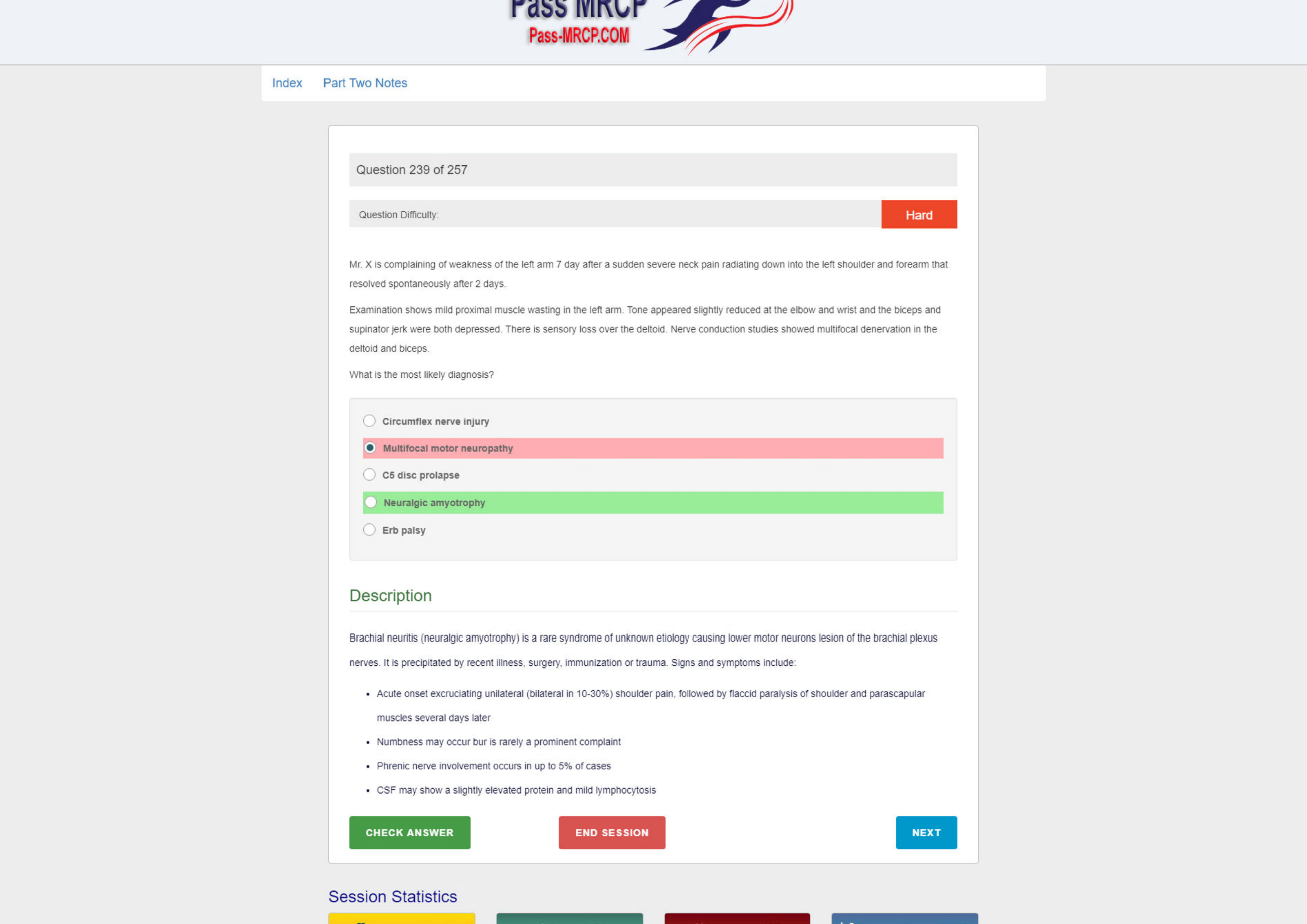
- ○ **Electroencephalography**
- ○ **Computed tomography head scan**
- ● **Urine microscopy**
- ○ **Magnetic resonance imaging brain scan**
- ○ **Cerebrospinal fluid examination**

Description

This patient has Herpes simplex encephalitis (HSE). It is manifested by seizures, focal neurological signs as aphasia, confusion and personality changes.

CSF shows picture of viral meningitis. MRI and CT scan show characteristic changes in the temporal lobes (low attenuation areas with surrounding edema and petechial hemorrhages).

Session Statistics



Question 239 of 257

Question Difficulty: Hard

Mr. X is complaining of weakness of the left arm 7 day after a sudden severe neck pain radiating down into the left shoulder and forearm that resolved spontaneously after 2 days.

Examination shows mild proximal muscle wasting in the left arm. Tone appeared slightly reduced at the elbow and wrist and the biceps and supinator jerk were both depressed. There is sensory loss over the deltoid. Nerve conduction studies showed multifocal denervation in the deltoid and biceps.

What is the most likely diagnosis?

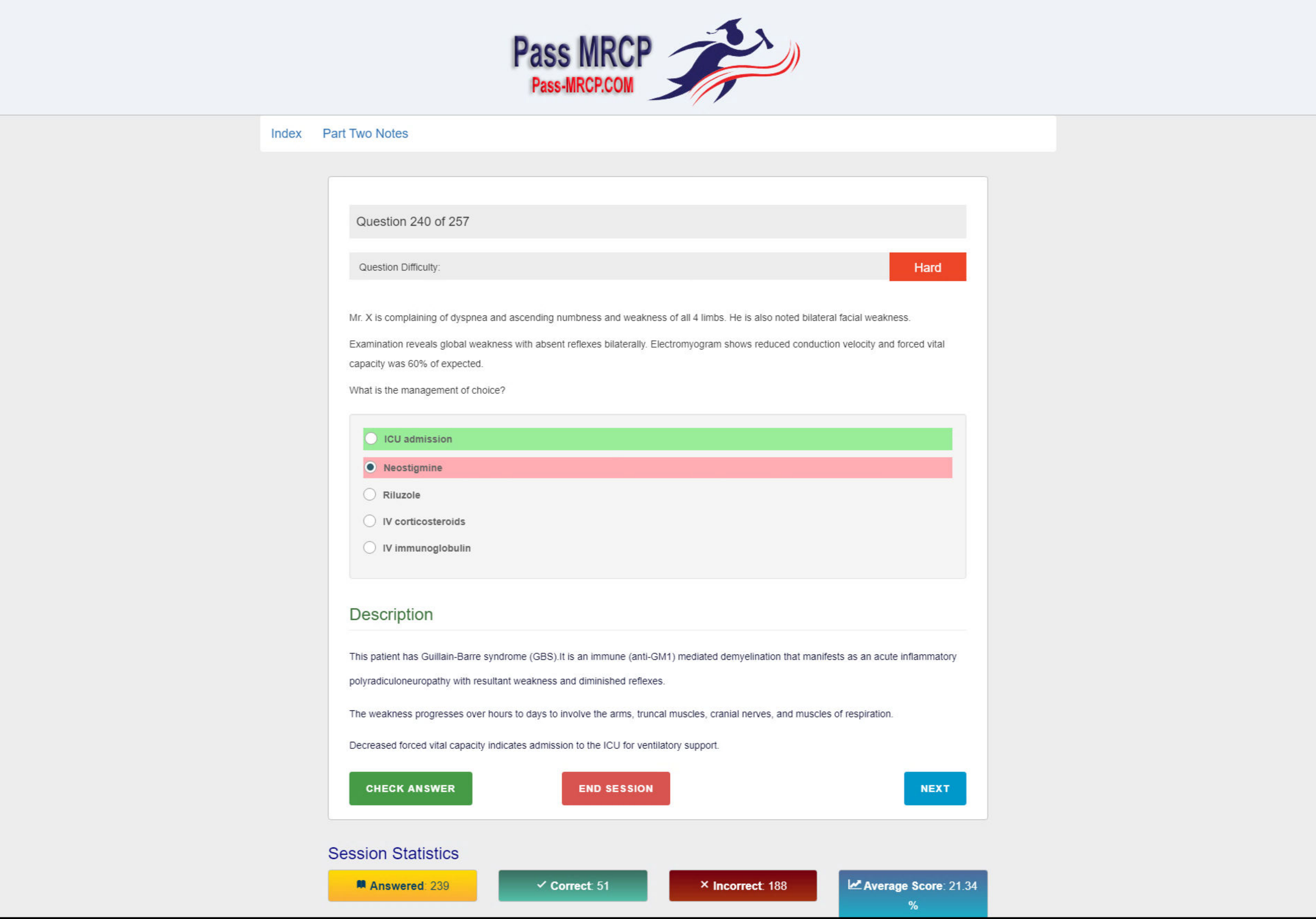
○ **Circumflex nerve injury**
● **Multifocal motor neuropathy**
○ **C5 disc prolapse**
○ **Neuralgic amyotrophy**
○ **Erb palsy**

Description

Brachial neuritis (neuralgic amyotrophy) is a rare syndrome of unknown etiology causing lower motor neurons lesion of the brachial plexus nerves. It is precipitated by recent illness, surgery, immunization or trauma. Signs and symptoms include:

- Acute onset excruciating unilateral (bilateral in 10-30%) shoulder pain, followed by flaccid paralysis of shoulder and parascapular muscles several days later
- Numbness may occur bur is rarely a prominent complaint
- Phrenic nerve involvement occurs in up to 5% of cases
- CSF may show a slightly elevated protein and mild lymphocytosis

Session Statistics



Question 240 of 257

Question Difficulty: Hard

Mr. X is complaining of dyspnea and ascending numbness and weakness of all 4 limbs. He is also noted bilateral facial weakness.

Examination reveals global weakness with absent reflexes bilaterally. Electromyogram shows reduced conduction velocity and forced vital capacity was 60% of expected.

What is the management of choice?

- ○ ICU admission
- ● Neostigmine
- ○ Riluzole
- ○ IV corticosteroids
- ○ IV immunoglobulin

Description

This patient has Guillain-Barre syndrome (GBS).It is an immune (anti-GM1) mediated demyelination that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes.

The weakness progresses over hours to days to involve the arms, truncal muscles, cranial nerves, and muscles of respiration.

Decreased forced vital capacity indicates admission to the ICU for ventilatory support.

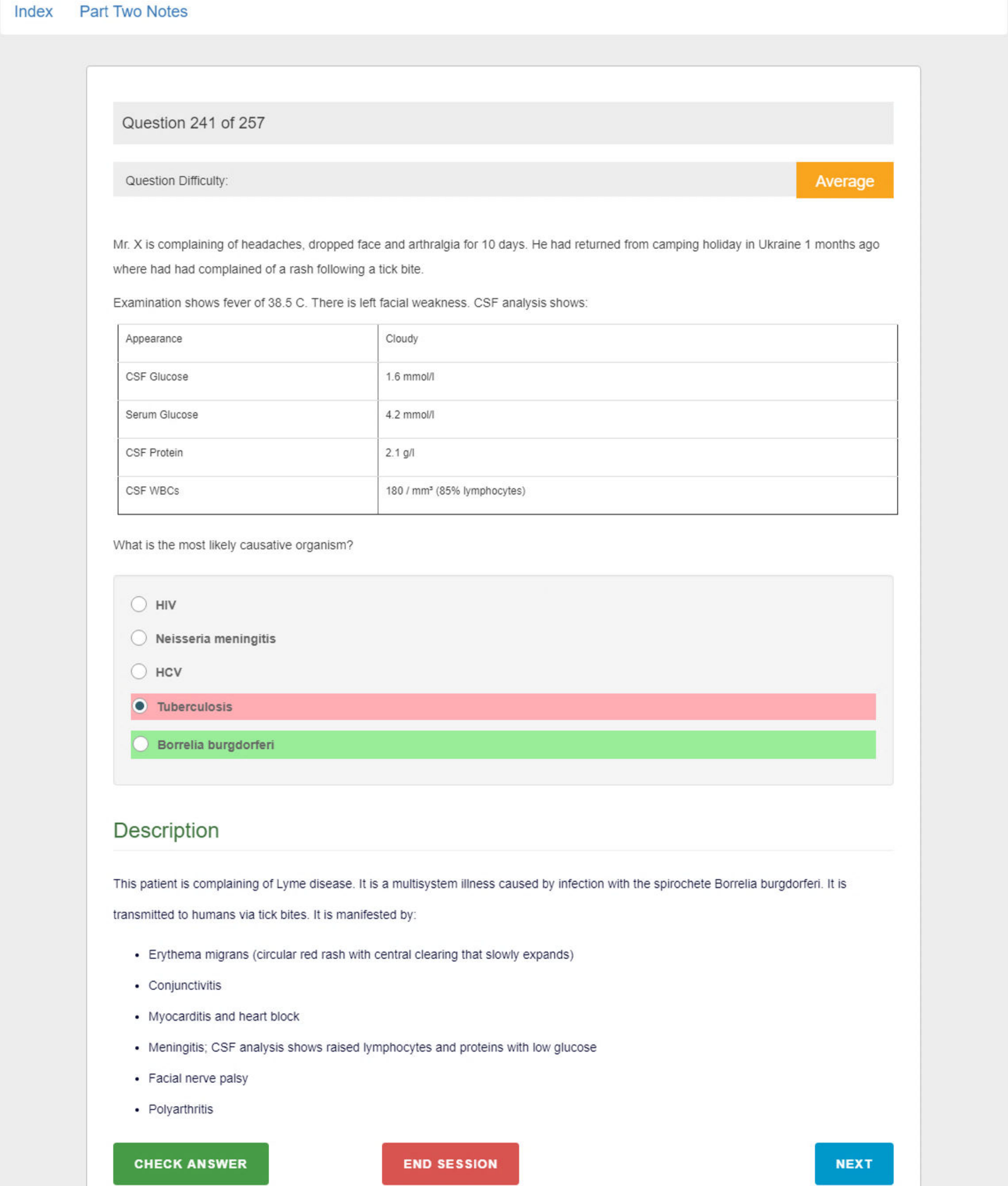
Session Statistics

Answered: 239

✓ Correct: 51

✕ Incorrect: 188

Average Score: 21.34 %



Question 241 of 257

Question Difficulty: **Average**

Mr. X is complaining of headaches, dropped face and arthralgia for 10 days. He had returned from camping holiday in Ukraine 1 months ago where had had complained of a rash following a tick bite.

Examination shows fever of 38.5 C. There is left facial weakness. CSF analysis shows:

Appearance	Cloudy
CSF Glucose	1.6 mmol/l
Serum Glucose	4.2 mmol/l
CSF Protein	2.1 g/l
CSF WBCs	180 / mm³ (85% lymphocytes)

What is the most likely causative organism?

○ **HIV**

○ **Neisseria meningitis**

○ **HCV**

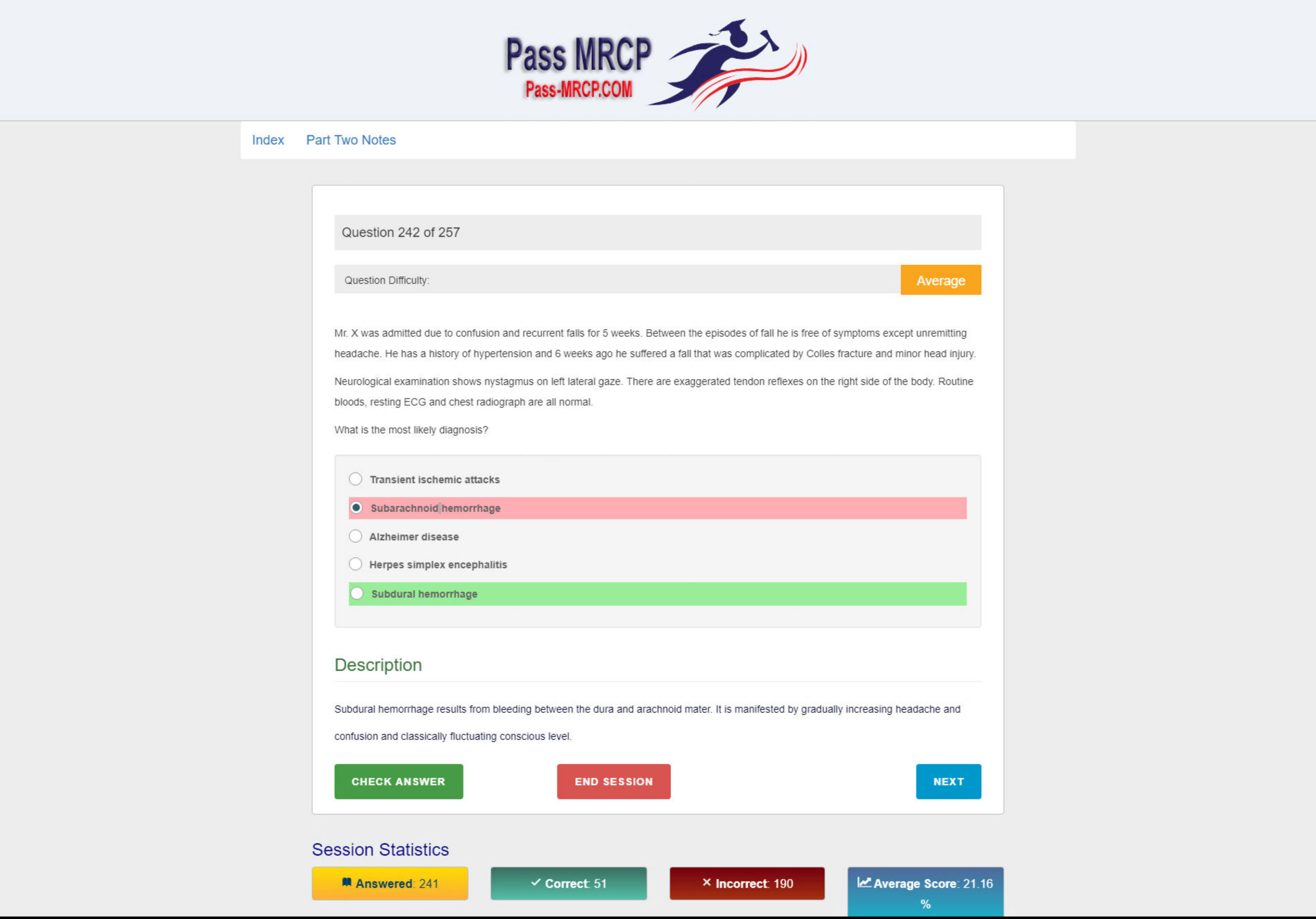
● **Tuberculosis**

○ **Borrelia burgdorferi**

Description

This patient is complaining of Lyme disease. It is a multisystem illness caused by infection with the spirochete Borrelia burgdorferi. It is transmitted to humans via tick bites. It is manifested by:

- Erythema migrans (circular red rash with central clearing that slowly expands)
- Conjunctivitis
- Myocarditis and heart block
- Meningitis; CSF analysis shows raised lymphocytes and proteins with low glucose
- Facial nerve palsy
- Polyarthritis



Question 242 of 257

Question Difficulty: Average

Mr. X was admitted due to confusion and recurrent falls for 5 weeks. Between the episodes of fall he is free of symptoms except unremitting headache. He has a history of hypertension and 6 weeks ago he suffered a fall that was complicated by Colles fracture and minor head injury.

Neurological examination shows nystagmus on left lateral gaze. There are exaggerated tendon reflexes on the right side of the body. Routine bloods, resting ECG and chest radiograph are all normal.

What is the most likely diagnosis?

- ○ Transient ischemic attacks
- ● Subarachnoid hemorrhage
- ○ Alzheimer disease
- ○ Herpes simplex encephalitis
- ○ Subdural hemorrhage

Description

Subdural hemorrhage results from bleeding between the dura and arachnoid mater. It is manifested by gradually increasing headache and confusion and classically fluctuating conscious level.

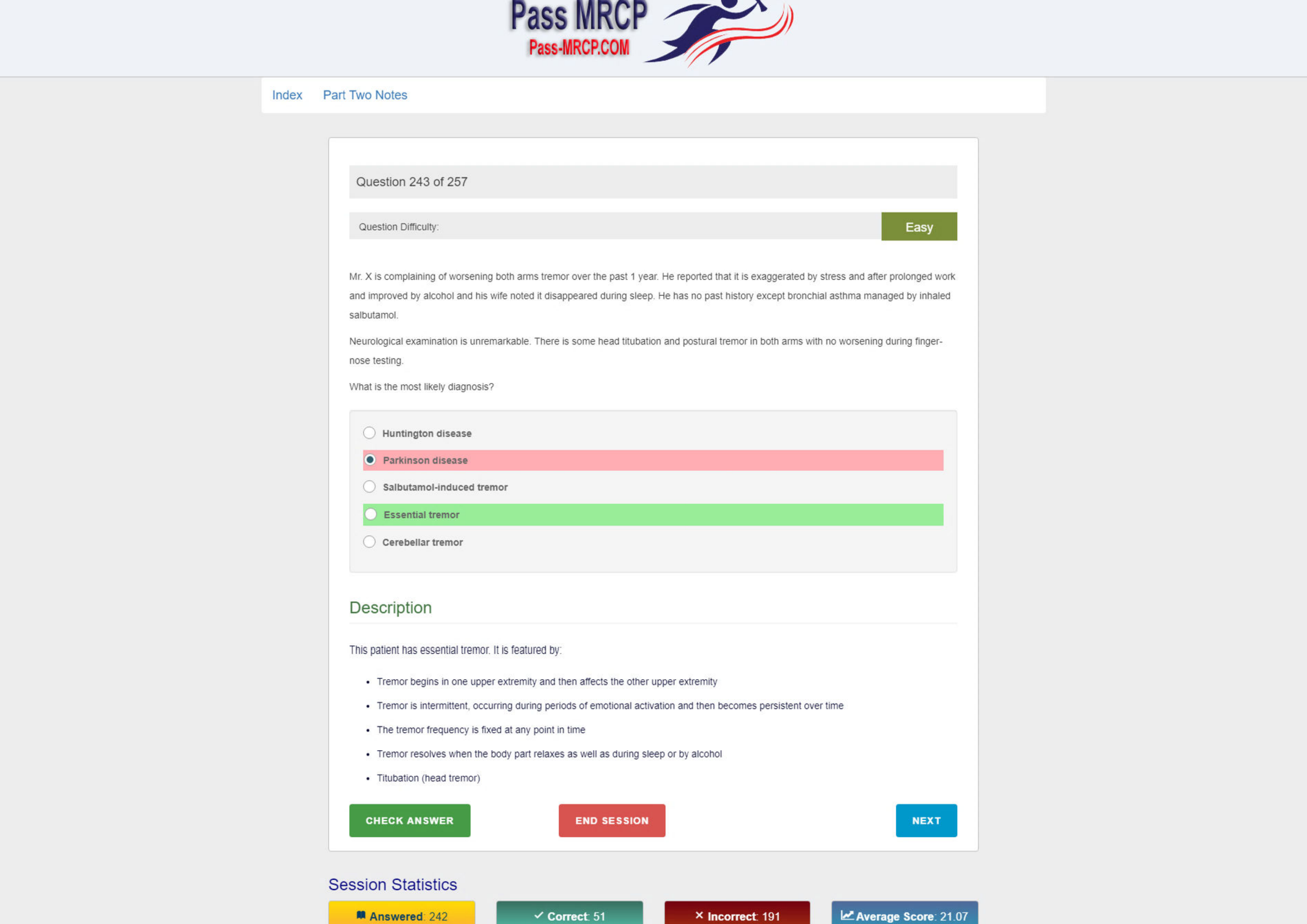
Session Statistics

Answered: 241

✓ Correct: 51

✕ Incorrect: 190

Average Score: 21.16 %



Question 243 of 257

Question Difficulty: Easy

Mr. X is complaining of worsening both arms tremor over the past 1 year. He reported that it is exaggerated by stress and after prolonged work and improved by alcohol and his wife noted it disappeared during sleep. He has no past history except bronchial asthma managed by inhaled salbutamol.

Neurological examination is unremarkable. There is some head titubation and postural tremor in both arms with no worsening during finger-nose testing.

What is the most likely diagnosis?

○ Huntington disease
● Parkinson disease
○ Salbutamol-induced tremor
○ Essential tremor
○ Cerebellar tremor

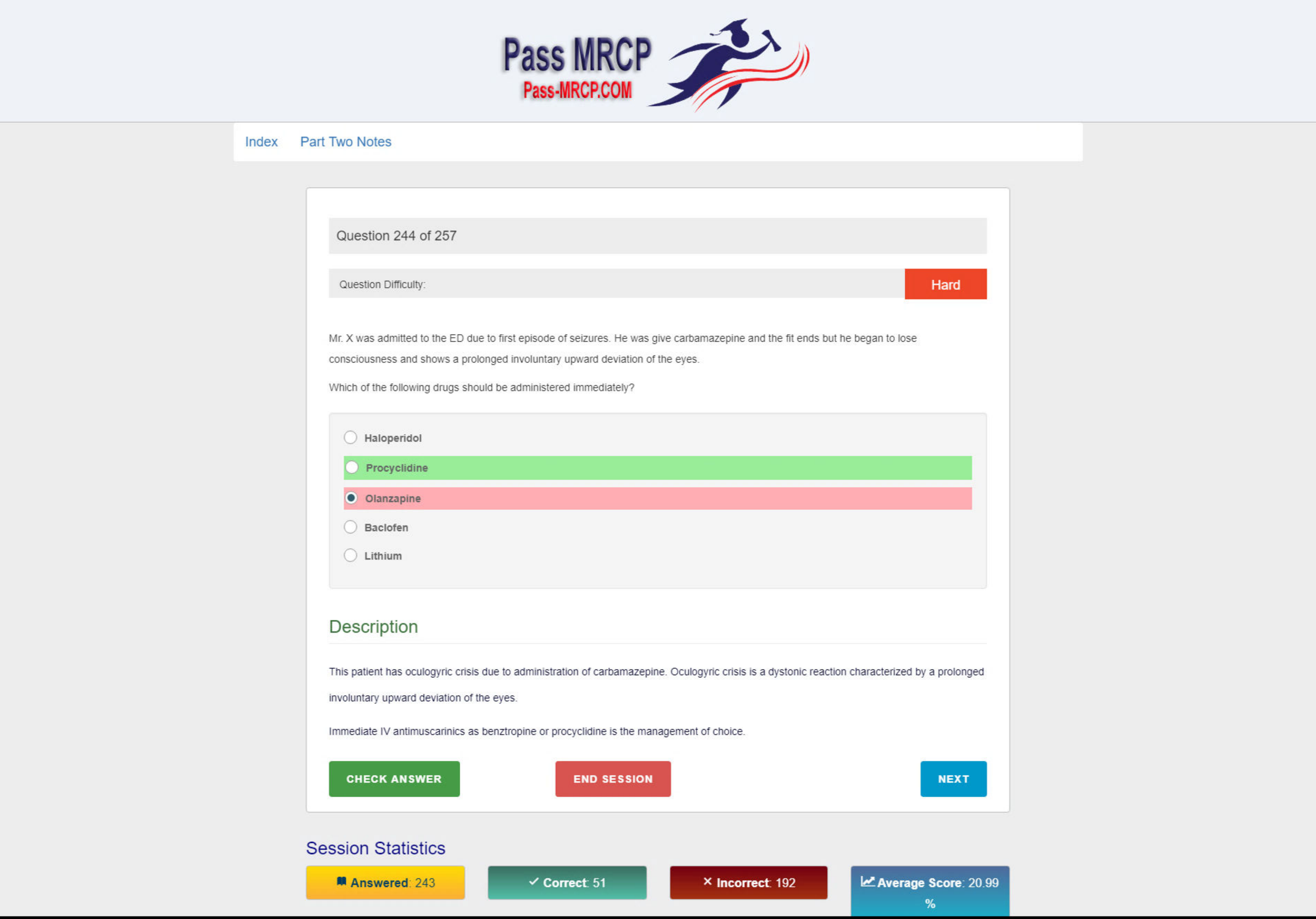
Description

This patient has essential tremor. It is featured by:

- Tremor begins in one upper extremity and then affects the other upper extremity
- Tremor is intermittent, occurring during periods of emotional activation and then becomes persistent over time
- The tremor frequency is fixed at any point in time
- Tremor resolves when the body part relaxes as well as during sleep or by alcohol
- Titubation (head tremor)

Session Statistics

Answered: 242
Correct: 51
Incorrect: 191
Average Score: 21.07



Question 244 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to first episode of seizures. He was give carbamazepine and the fit ends but he began to lose consciousness and shows a prolonged involuntary upward deviation of the eyes.

Which of the following drugs should be administered immediately?

- ○ **Haloperidol**
- ○ **Procyclidine**
- ● **Olanzapine**
- ○ **Baclofen**
- ○ **Lithium**

Description

This patient has oculogyric crisis due to administration of carbamazepine. Oculogyric crisis is a dystonic reaction characterized by a prolonged involuntary upward deviation of the eyes.

Immediate IV antimuscarinics as benztropine or procyclidine is the management of choice.

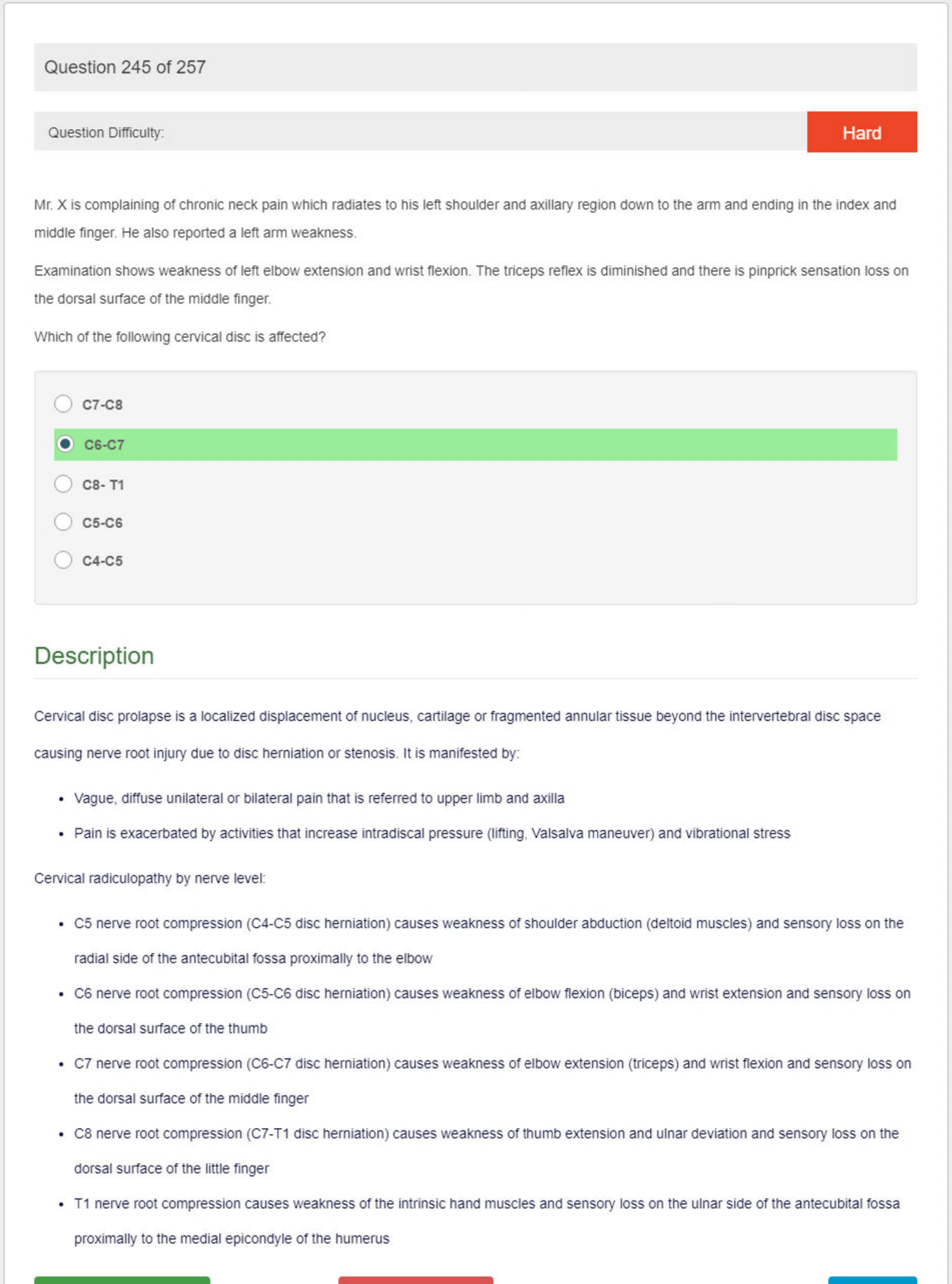
Session Statistics

Answered: 243

✓ **Correct**: 51

× **Incorrect**: 192

Average Score: 20.99 %



Question 245 of 257

Question Difficulty: **Hard**

Mr. X is complaining of chronic neck pain which radiates to his left shoulder and axillary region down to the arm and ending in the index and middle finger. He also reported a left arm weakness.

Examination shows weakness of left elbow extension and wrist flexion. The triceps reflex is diminished and there is pinprick sensation loss on the dorsal surface of the middle finger.

Which of the following cervical disc is affected?

○ **C7-C8**
● **C6-C7**
○ **C8- T1**
○ **C5-C6**
○ **C4-C5**

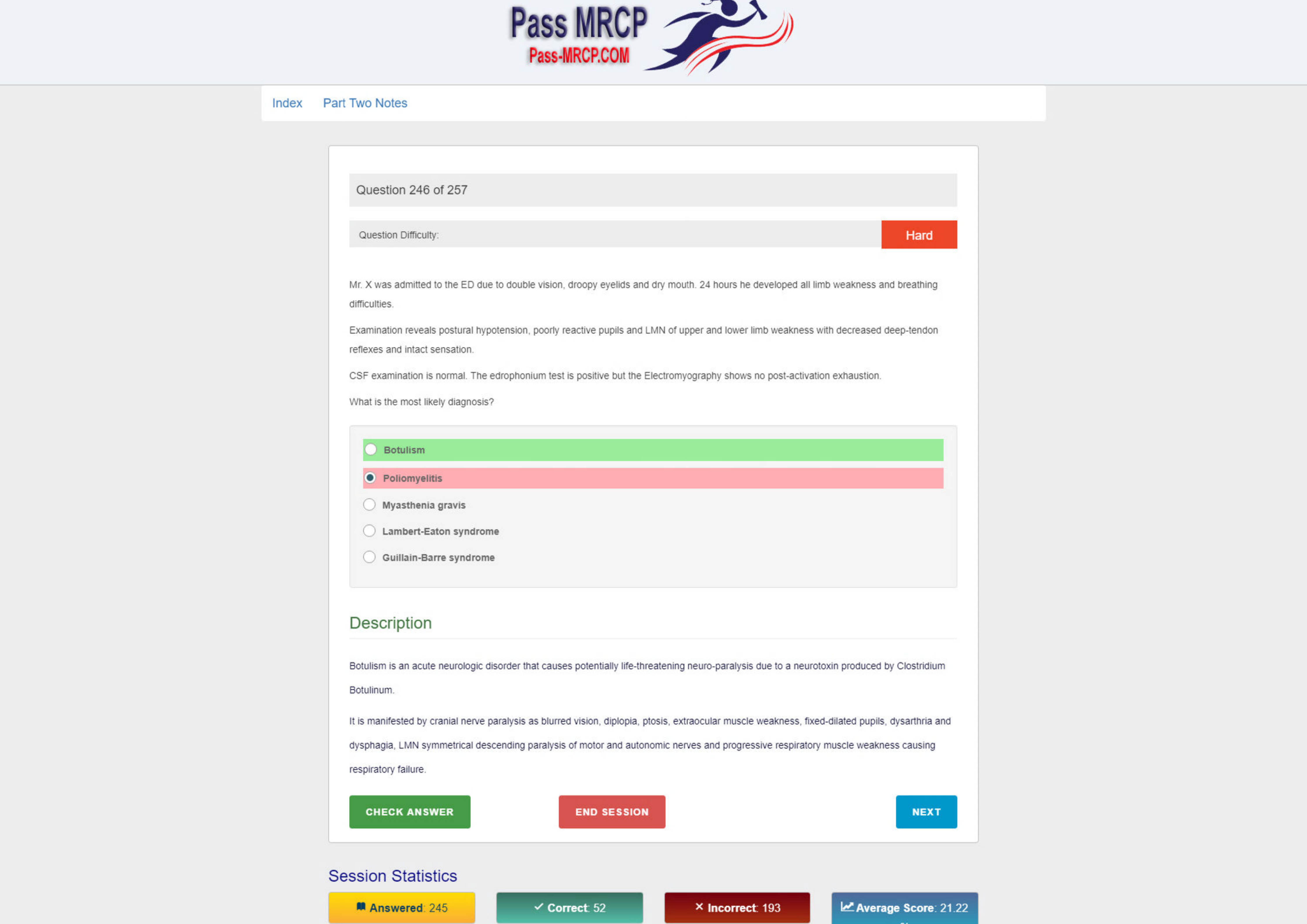
Description

Cervical disc prolapse is a localized displacement of nucleus, cartilage or fragmented annular tissue beyond the intervertebral disc space causing nerve root injury due to disc herniation or stenosis. It is manifested by:

- Vague, diffuse unilateral or bilateral pain that is referred to upper limb and axilla
- Pain is exacerbated by activities that increase intradiscal pressure (lifting, Valsalva maneuver) and vibrational stress

Cervical radiculopathy by nerve level:

- C5 nerve root compression (C4-C5 disc herniation) causes weakness of shoulder abduction (deltoid muscles) and sensory loss on the radial side of the antecubital fossa proximally to the elbow
- C6 nerve root compression (C5-C6 disc herniation) causes weakness of elbow flexion (biceps) and wrist extension and sensory loss on the dorsal surface of the thumb
- C7 nerve root compression (C6-C7 disc herniation) causes weakness of elbow extension (triceps) and wrist flexion and sensory loss on the dorsal surface of the middle finger
- C8 nerve root compression (C7-T1 disc herniation) causes weakness of thumb extension and ulnar deviation and sensory loss on the dorsal surface of the little finger
- T1 nerve root compression causes weakness of the intrinsic hand muscles and sensory loss on the ulnar side of the antecubital fossa proximally to the medial epicondyle of the humerus



Question 246 of 257

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to double vision, droopy eyelids and dry mouth. 24 hours he developed all limb weakness and breathing difficulties.

Examination reveals postural hypotension, poorly reactive pupils and LMN of upper and lower limb weakness with decreased deep-tendon reflexes and intact sensation.

CSF examination is normal. The edrophonium test is positive but the Electromyography shows no post-activation exhaustion.

What is the most likely diagnosis?

- ○ **Botulism**
- ● **Poliomyelitis**
- ○ **Myasthenia gravis**
- ○ **Lambert-Eaton syndrome**
- ○ **Guillain-Barre syndrome**

Description

Botulism is an acute neurologic disorder that causes potentially life-threatening neuro-paralysis due to a neurotoxin produced by Clostridium Botulinum.

It is manifested by cranial nerve paralysis as blurred vision, diplopia, ptosis, extraocular muscle weakness, fixed-dilated pupils, dysarthria and dysphagia, LMN symmetrical descending paralysis of motor and autonomic nerves and progressive respiratory muscle weakness causing respiratory failure.

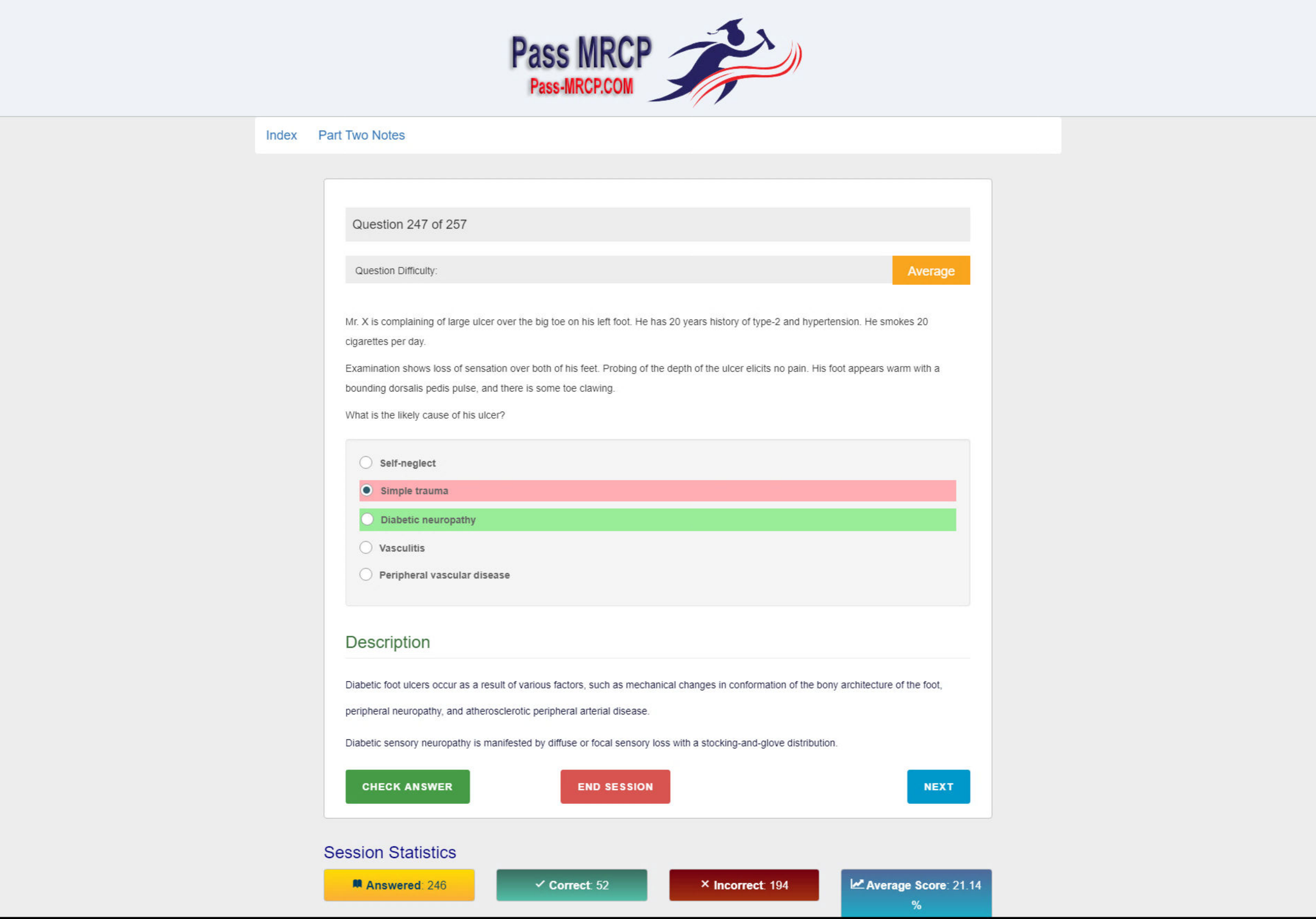
Session Statistics

Answered: 245

✓ **Correct**: 52

✕ **Incorrect**: 193

Average Score: 21.22



Question 247 of 257

Question Difficulty: Average

Mr. X is complaining of large ulcer over the big toe on his left foot. He has 20 years history of type-2 and hypertension. He smokes 20 cigarettes per day.

Examination shows loss of sensation over both of his feet. Probing of the depth of the ulcer elicits no pain. His foot appears warm with a bounding dorsalis pedis pulse, and there is some toe clawing.

What is the likely cause of his ulcer?

- ○ **Self-neglect**
- ● **Simple trauma**
- ○ **Diabetic neuropathy**
- ○ **Vasculitis**
- ○ **Peripheral vascular disease**

Description

Diabetic foot ulcers occur as a result of various factors, such as mechanical changes in conformation of the bony architecture of the foot, peripheral neuropathy, and atherosclerotic peripheral arterial disease.

Diabetic sensory neuropathy is manifested by diffuse or focal sensory loss with a stocking-and-glove distribution.

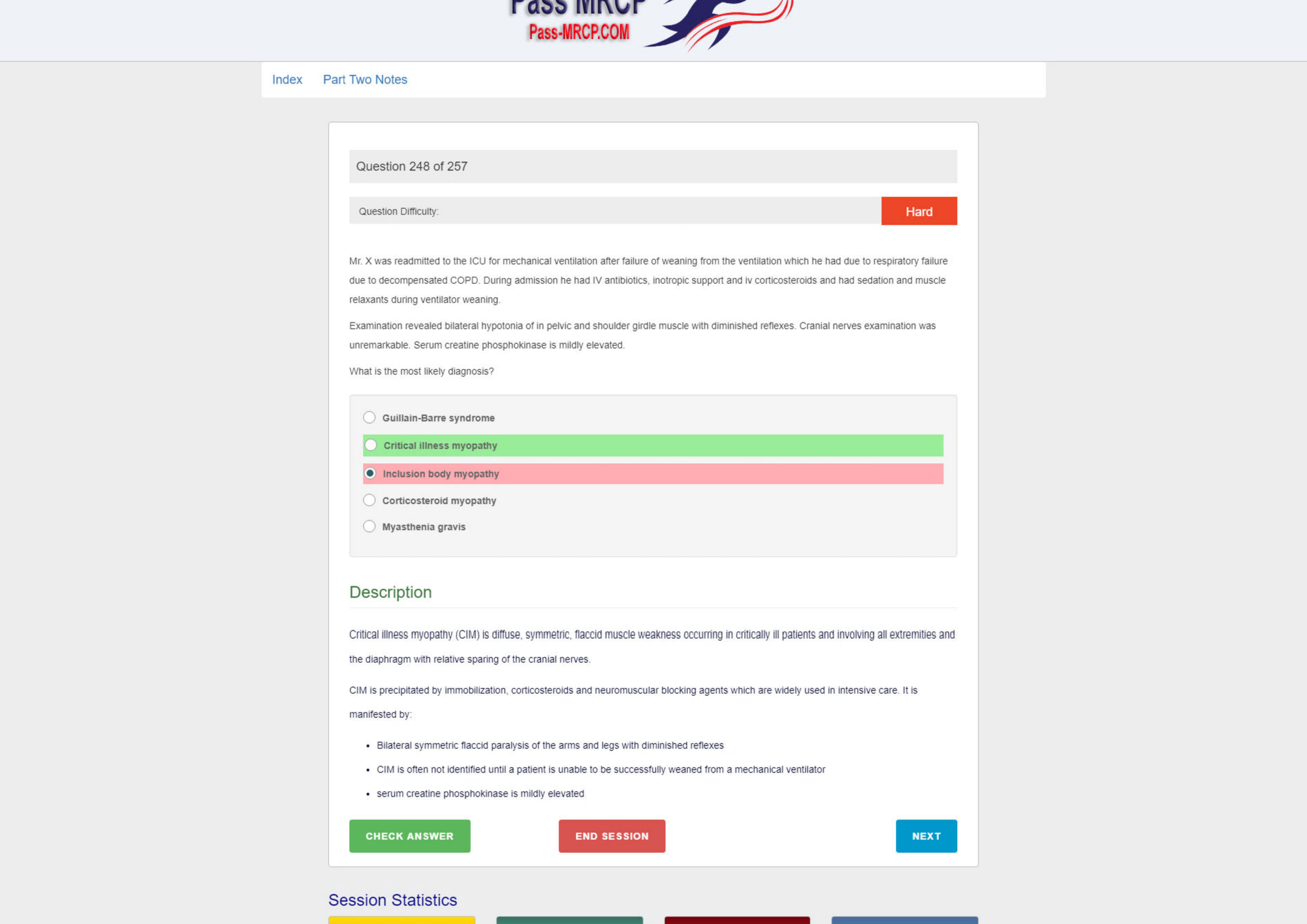
Session Statistics

Answered: 246

✓ **Correct**: 52

✕ **Incorrect**: 194

Average Score: 21.14 %



Question 248 of 257

Question Difficulty: Hard

Mr. X was readmitted to the ICU for mechanical ventilation after failure of weaning from the ventilation which he had due to respiratory failure due to decompensated COPD. During admission he had IV antibiotics, inotropic support and iv corticosteroids and had sedation and muscle relaxants during ventilator weaning.

Examination revealed bilateral hypotonia of in pelvic and shoulder girdle muscle with diminished reflexes. Cranial nerves examination was unremarkable. Serum creatine phosphokinase is mildly elevated.

What is the most likely diagnosis?

○ **Guillain-Barre syndrome**
○ **Critical illness myopathy**
● **Inclusion body myopathy**
○ **Corticosteroid myopathy**
○ **Myasthenia gravis**

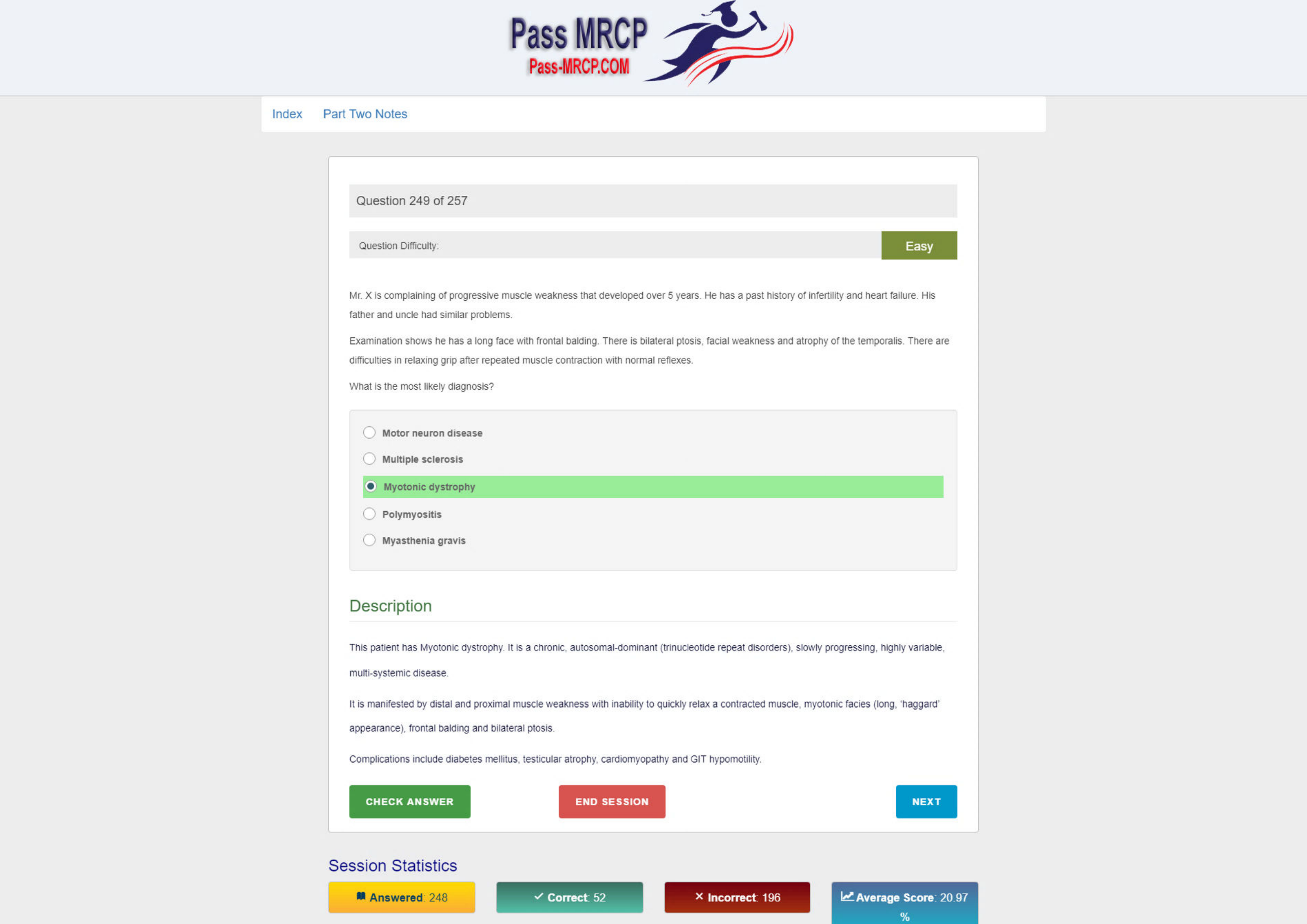
Description

Critical illness myopathy (CIM) is diffuse, symmetric, flaccid muscle weakness occurring in critically ill patients and involving all extremities and the diaphragm with relative sparing of the cranial nerves.

CIM is precipitated by immobilization, corticosteroids and neuromuscular blocking agents which are widely used in intensive care. It is manifested by:

- Bilateral symmetric flaccid paralysis of the arms and legs with diminished reflexes
- CIM is often not identified until a patient is unable to be successfully weaned from a mechanical ventilator
- serum creatine phosphokinase is mildly elevated

Session Statistics



Question 249 of 257

Question Difficulty: Easy

Mr. X is complaining of progressive muscle weakness that developed over 5 years. He has a past history of infertility and heart failure. His father and uncle had similar problems.

Examination shows he has a long face with frontal balding. There is bilateral ptosis, facial weakness and atrophy of the temporalis. There are difficulties in relaxing grip after repeated muscle contraction with normal reflexes.

What is the most likely diagnosis?

- ○ **Motor neuron disease**
- ○ **Multiple sclerosis**
- ● **Myotonic dystrophy**
- ○ **Polymyositis**
- ○ **Myasthenia gravis**

Description

This patient has Myotonic dystrophy. It is a chronic, autosomal-dominant (trinucleotide repeat disorders), slowly progressing, highly variable, multi-systemic disease.

It is manifested by distal and proximal muscle weakness with inability to quickly relax a contracted muscle, myotonic facies (long, ‘haggard’ appearance), frontal balding and bilateral ptosis.

Complications include diabetes mellitus, testicular atrophy, cardiomyopathy and GIT hypomotility.

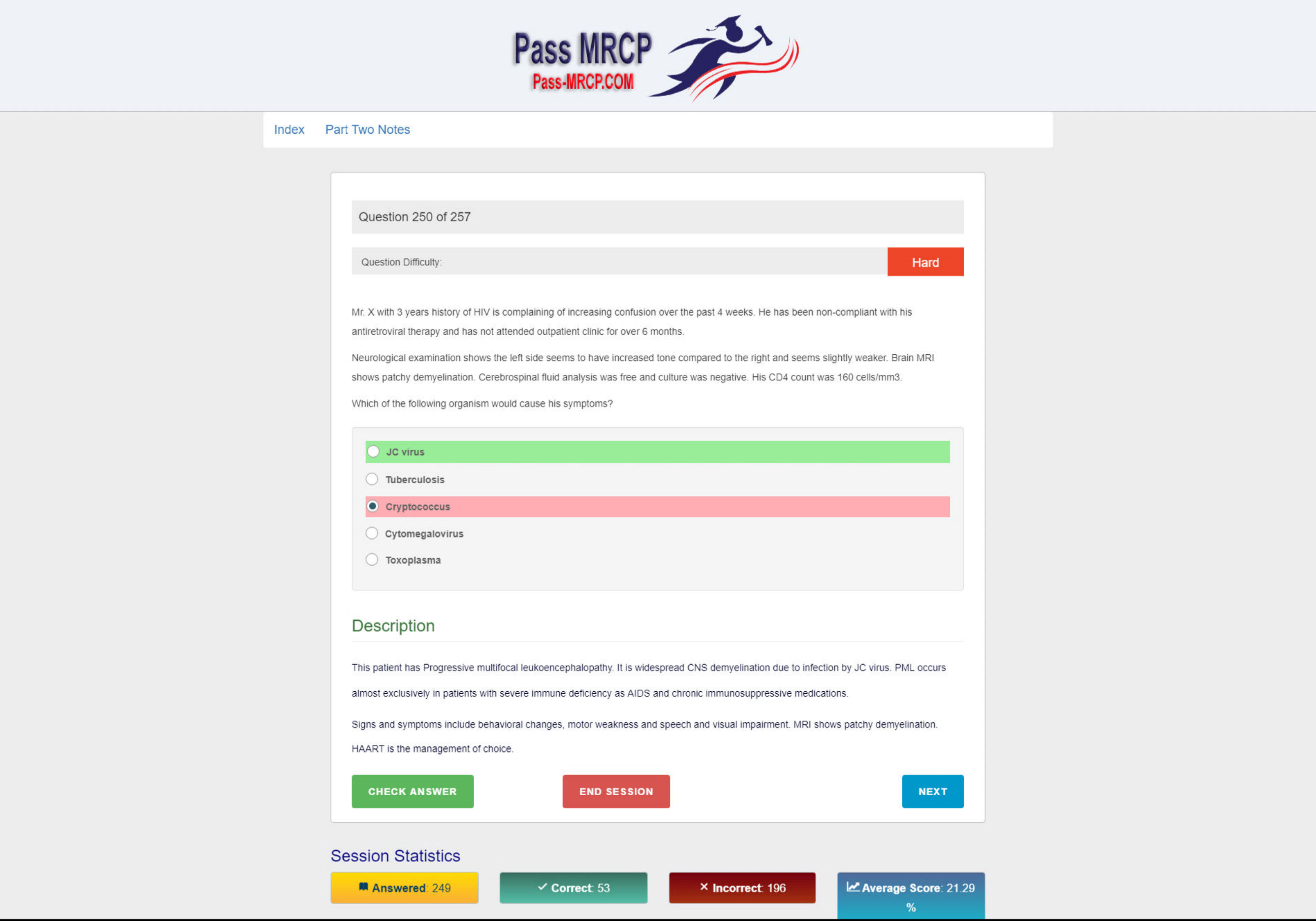
Session Statistics

Answered: 248

✓ **Correct**: 52

✕ **Incorrect**: 196

Average Score: 20.97 %



Question 250 of 257

Question Difficulty: Hard

Mr. X with 3 years history of HIV is complaining of increasing confusion over the past 4 weeks. He has been non-compliant with his antiretroviral therapy and has not attended outpatient clinic for over 6 months.

Neurological examination shows the left side seems to have increased tone compared to the right and seems slightly weaker. Brain MRI shows patchy demyelination. Cerebrospinal fluid analysis was free and culture was negative. His CD4 count was 160 cells/mm3.

Which of the following organism would cause his symptoms?

- ○ JC virus
- ○ Tuberculosis
- ● Cryptococcus
- ○ Cytomegalovirus
- ○ Toxoplasma

Description

This patient has Progressive multifocal leukoencephalopathy. It is widespread CNS demyelination due to infection by JC virus. PML occurs almost exclusively in patients with severe immune deficiency as AIDS and chronic immunosuppressive medications.

Signs and symptoms include behavioral changes, motor weakness and speech and visual impairment. MRI shows patchy demyelination.

HAART is the management of choice.

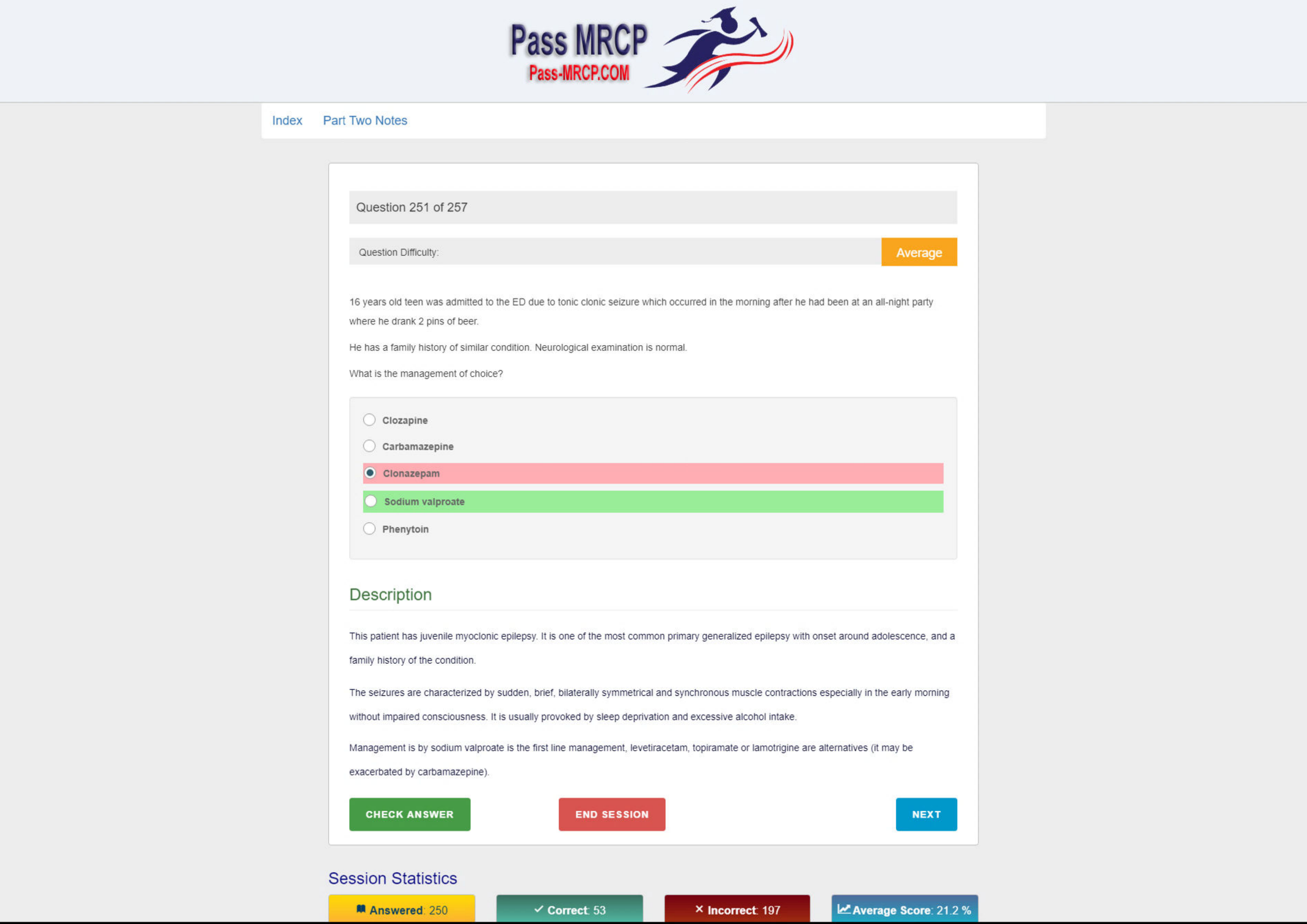
Session Statistics

Answered: 249

✓ Correct: 53

✕ Incorrect: 196

Average Score: 21.29 %



Question 251 of 257

Question Difficulty: Average

16 years old teen was admitted to the ED due to tonic clonic seizure which occurred in the morning after he had been at an all-night party where he drank 2 pins of beer.

He has a family history of similar condition. Neurological examination is normal.

What is the management of choice?

○ Clozapine
○ Carbamazepine
● Clonazepam
○ Sodium valproate
○ Phenytoin

Description

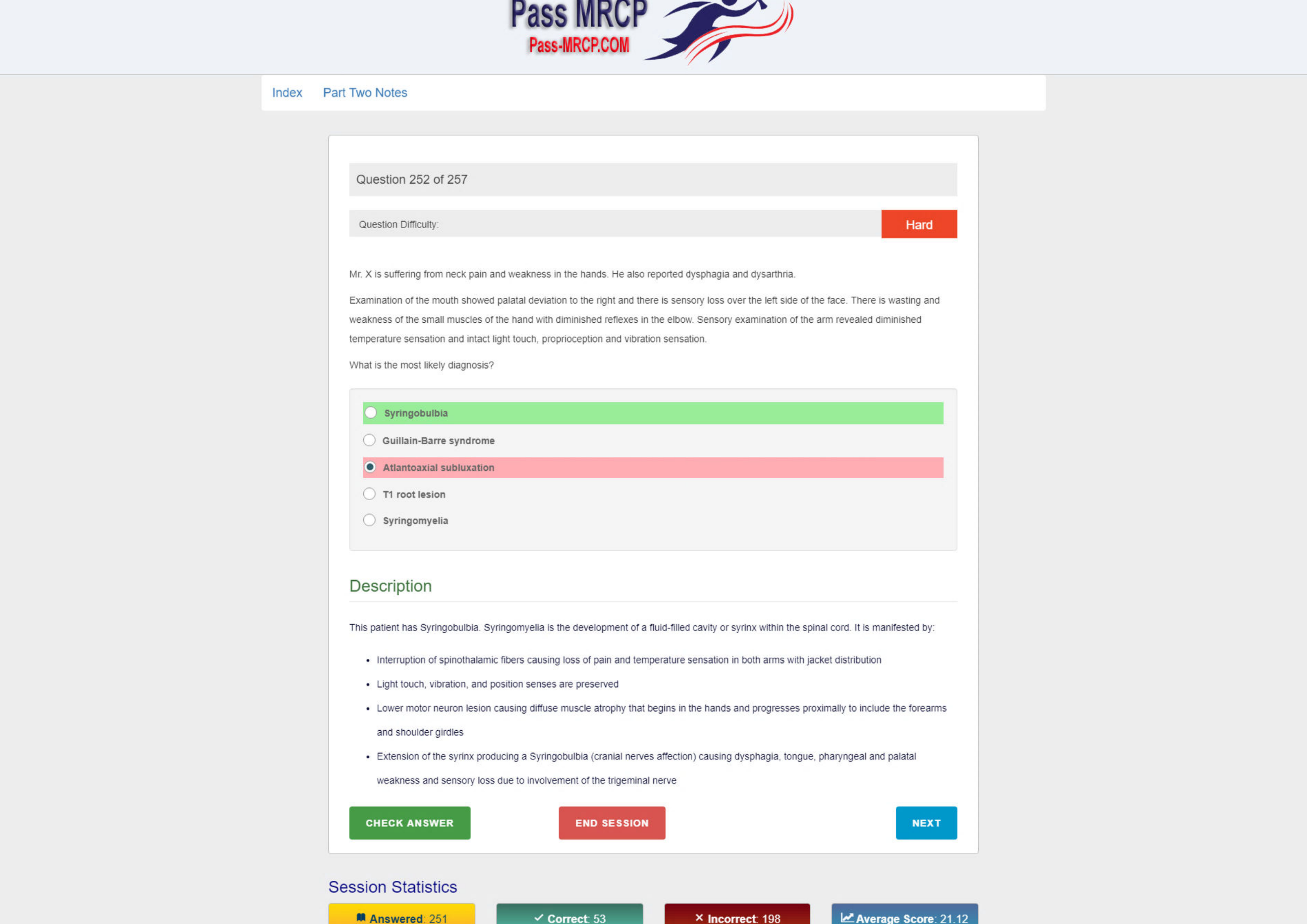
This patient has juvenile myoclonic epilepsy. It is one of the most common primary generalized epilepsy with onset around adolescence, and a family history of the condition.

The seizures are characterized by sudden, brief, bilaterally symmetrical and synchronous muscle contractions especially in the early morning without impaired consciousness. It is usually provoked by sleep deprivation and excessive alcohol intake.

Management is by sodium valproate is the first line management, levetiracetam, topiramate or lamotrigine are alternatives (it may be exacerbated by carbamazepine).

Session Statistics

Answered: 250
✓ Correct: 53
✕ Incorrect: 197
Average Score: 21.2 %



Question 252 of 257

Question Difficulty: Hard

Mr. X is suffering from neck pain and weakness in the hands. He also reported dysphagia and dysarthria.

Examination of the mouth showed palatal deviation to the right and there is sensory loss over the left side of the face. There is wasting and weakness of the small muscles of the hand with diminished reflexes in the elbow. Sensory examination of the arm revealed diminished temperature sensation and intact light touch, proprioception and vibration sensation.

What is the most likely diagnosis?

○ **Syringobulbia**
○ **Guillain-Barre syndrome**
● **Atlantoaxial subluxation**
○ **T1 root lesion**
○ **Syringomyelia**

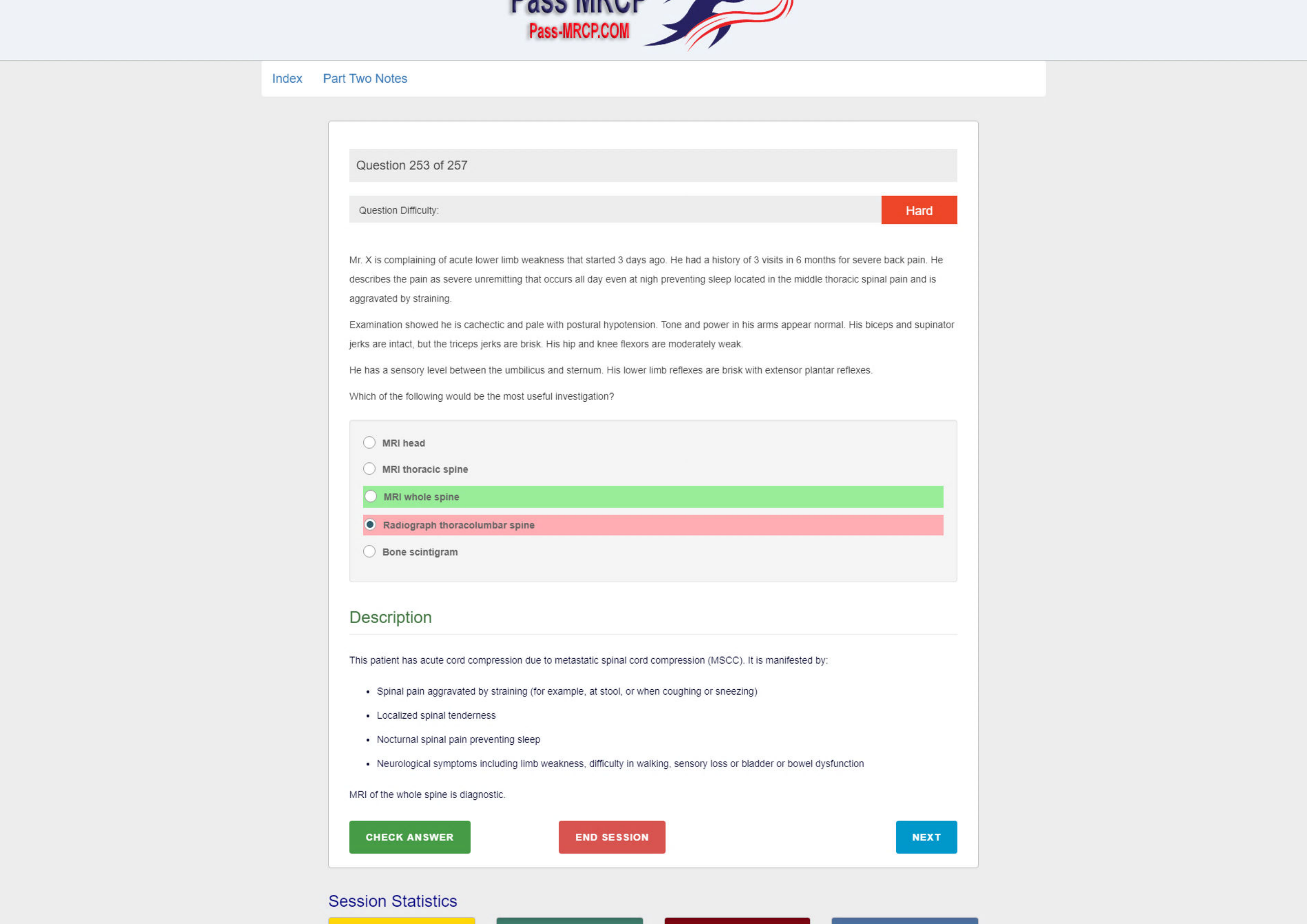
Description

This patient has Syringobulbia. Syringomyelia is the development of a fluid-filled cavity or syrinx within the spinal cord. It is manifested by:

- Interruption of spinothalamic fibers causing loss of pain and temperature sensation in both arms with jacket distribution
- Light touch, vibration, and position senses are preserved
- Lower motor neuron lesion causing diffuse muscle atrophy that begins in the hands and progresses proximally to include the forearms and shoulder girdles
- Extension of the syrinx producing a Syringobulbia (cranial nerves affection) causing dysphagia, tongue, pharyngeal and palatal weakness and sensory loss due to involvement of the trigeminal nerve

Session Statistics

Answered: 251
✓ **Correct**: 53
✕ **Incorrect**: 198
Average Score: 21.12



Question 253 of 257

Question Difficulty: Hard

Mr. X is complaining of acute lower limb weakness that started 3 days ago. He had a history of 3 visits in 6 months for severe back pain. He describes the pain as severe unremitting that occurs all day even at nigh preventing sleep located in the middle thoracic spinal pain and is aggravated by straining.

Examination showed he is cachectic and pale with postural hypotension. Tone and power in his arms appear normal. His biceps and supinator jerks are intact, but the triceps jerks are brisk. His hip and knee flexors are moderately weak.

He has a sensory level between the umbilicus and sternum. His lower limb reflexes are brisk with extensor plantar reflexes.

Which of the following would be the most useful investigation?

○ **MRI head**
○ **MRI thoracic spine**
○ **MRI whole spine**
● **Radiograph thoracolumbar spine**
○ **Bone scintigram**

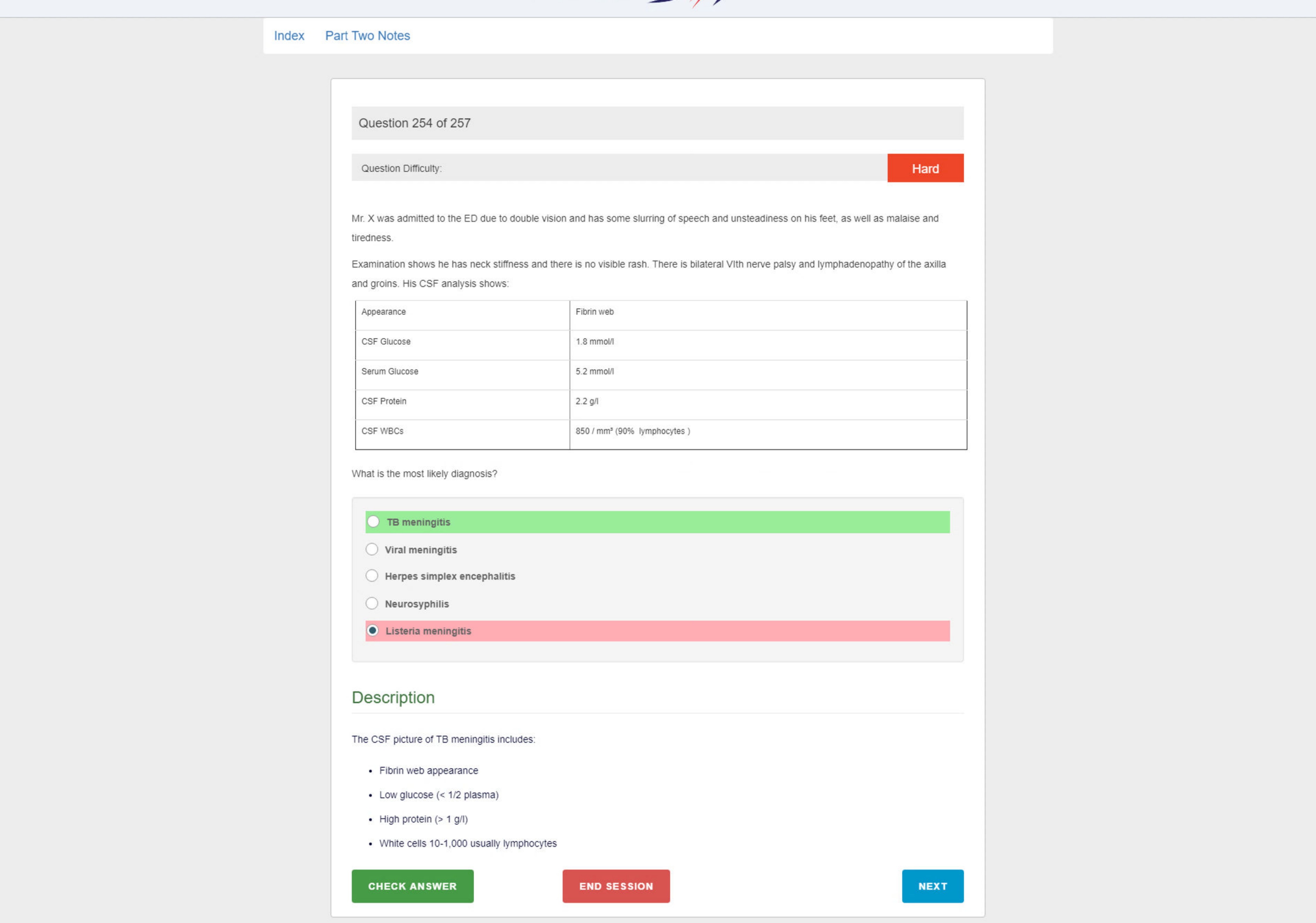
Description

This patient has acute cord compression due to metastatic spinal cord compression (MSCC). It is manifested by:

- Spinal pain aggravated by straining (for example, at stool, or when coughing or sneezing)
- Localized spinal tenderness
- Nocturnal spinal pain preventing sleep
- Neurological symptoms including limb weakness, difficulty in walking, sensory loss or bladder or bowel dysfunction

MRI of the whole spine is diagnostic.

Session Statistics



Question 254 of 257

Question Difficulty: Hard

Mr. X was admitted to the ED due to double vision and has some slurring of speech and unsteadiness on his feet, as well as malaise and tiredness.

Examination shows he has neck stiffness and there is no visible rash. There is bilateral VIth nerve palsy and lymphadenopathy of the axilla and groins. His CSF analysis shows:

Appearance	Fibrin web
CSF Glucose	1.8 mmol/l
Serum Glucose	5.2 mmol/l
CSF Protein	2.2 g/l
CSF WBCs	850 / mm³ (90% lymphocytes)

What is the most likely diagnosis?

○ **TB meningitis**

○ **Viral meningitis**

○ **Herpes simplex encephalitis**

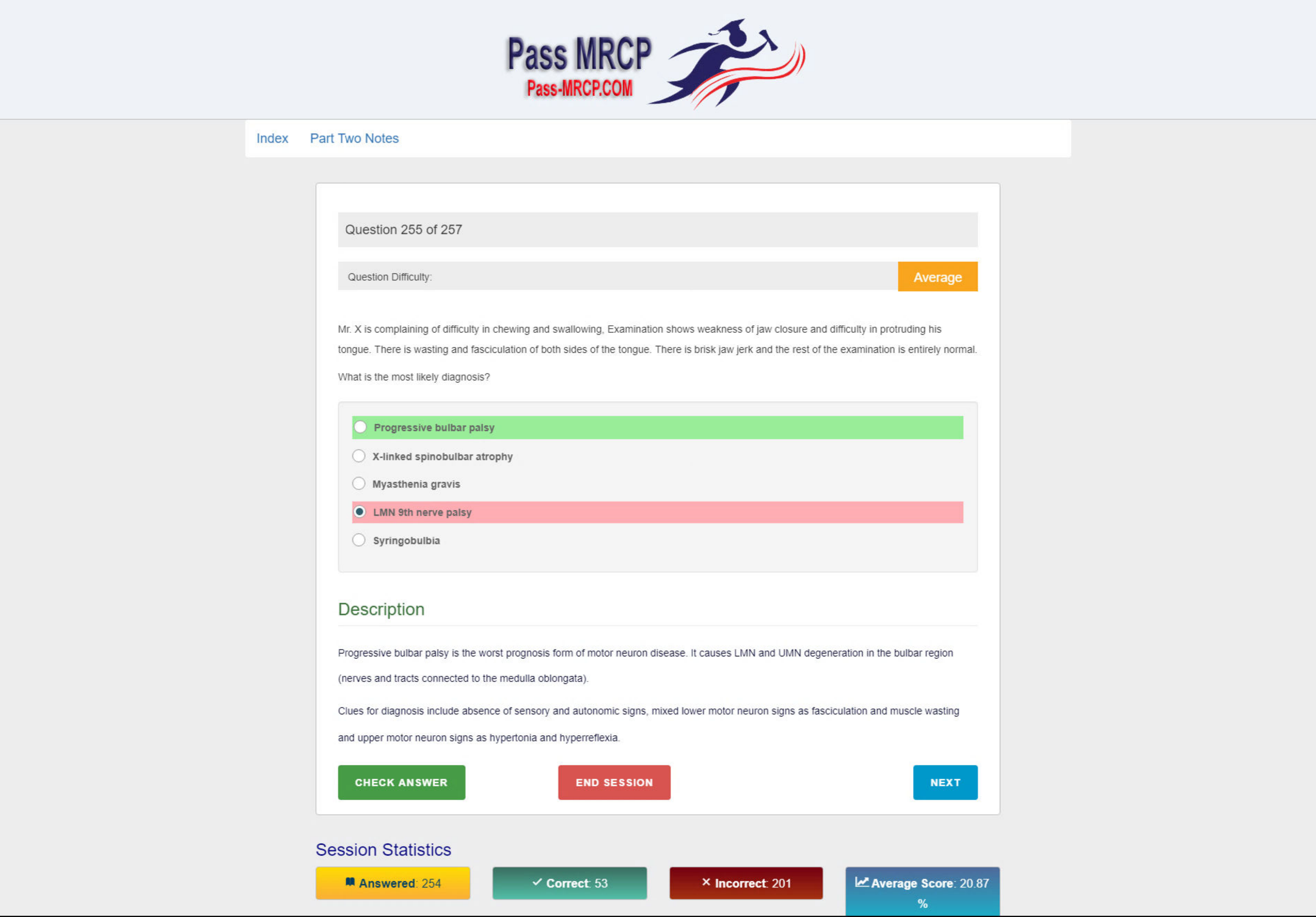
○ **Neurosyphilis**

● **Listeria meningitis**

Description

The CSF picture of TB meningitis includes:

- Fibrin web appearance
- Low glucose (< 1/2 plasma)
- High protein (> 1 g/l)
- White cells 10-1,000 usually lymphocytes



Question 255 of 257

Question Difficulty: Average

Mr. X is complaining of difficulty in chewing and swallowing, Examination shows weakness of jaw closure and difficulty in protruding his tongue. There is wasting and fasciculation of both sides of the tongue. There is brisk jaw jerk and the rest of the examination is entirely normal.

What is the most likely diagnosis?

- ○ **Progressive bulbar palsy**
- ○ **X-linked spinobulbar atrophy**
- ○ **Myasthenia gravis**
- ● **LMN 9th nerve palsy**
- ○ **Syringobulbia**

Description

Progressive bulbar palsy is the worst prognosis form of motor neuron disease. It causes LMN and UMN degeneration in the bulbar region (nerves and tracts connected to the medulla oblongata).

Clues for diagnosis include absence of sensory and autonomic signs, mixed lower motor neuron signs as fasciculation and muscle wasting and upper motor neuron signs as hypertonia and hyperreflexia.

Session Statistics

Answered: 254

✓ **Correct**: 53

✕ **Incorrect**: 201

Average Score: 20.87 %

Question 256 of 257

Question Difficulty: **Easy**

15 years old teen is complaining of depression, and poor concentration. He tends to cry very easily. He also complains of a resting tremor in one hand that has become progressively more noticeable over the last few months. He reports he is hearing second person auditory hallucinations.

Examination reveals he has an expressionless face and when writing a sentence she has small cramped handwriting. His gait is slow and there is some increased tone in her right arm. Other neurological examination was normal.

Investigations show:

Hemoglobin	12 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	210 k/mm3	(150-450 million/mm3)
Serum creatinine	107 mmol/L	(53-106 mmol/L)
Bilirubin	25 µmol/L	(2-17 µmol/L)
ALT	88 U/L	(8-20 U/L)
Serum creatine kinase	160 U/L	(25-90 U/L)
Serum sodium	137 mmol/L	(136-145 mmol/L)
ALT	88 U/L	(8-20 U/L)
Serum creatine kinase	160 U/L	(25-90 U/L)
Serum sodium	137 mmol/L	(136-145 mmol/L)
Serum potassium	4 mmol/L	(3.5-5.0 mmol/L)

What is the most likely diagnosis?

○ **Idiopathic Parkinson disease**
○ **New variant CJD**
○ **Creutzfeldt Jakob disease**
● **Schizophrenia**
○ **Wilson disease**

Description

Wilson disease is an autosomal recessive disorder of copper metabolism that is characterized by excessive deposition of copper in the liver, brain, and other tissues. Onset of symptoms is usually between 10 and 25 years.

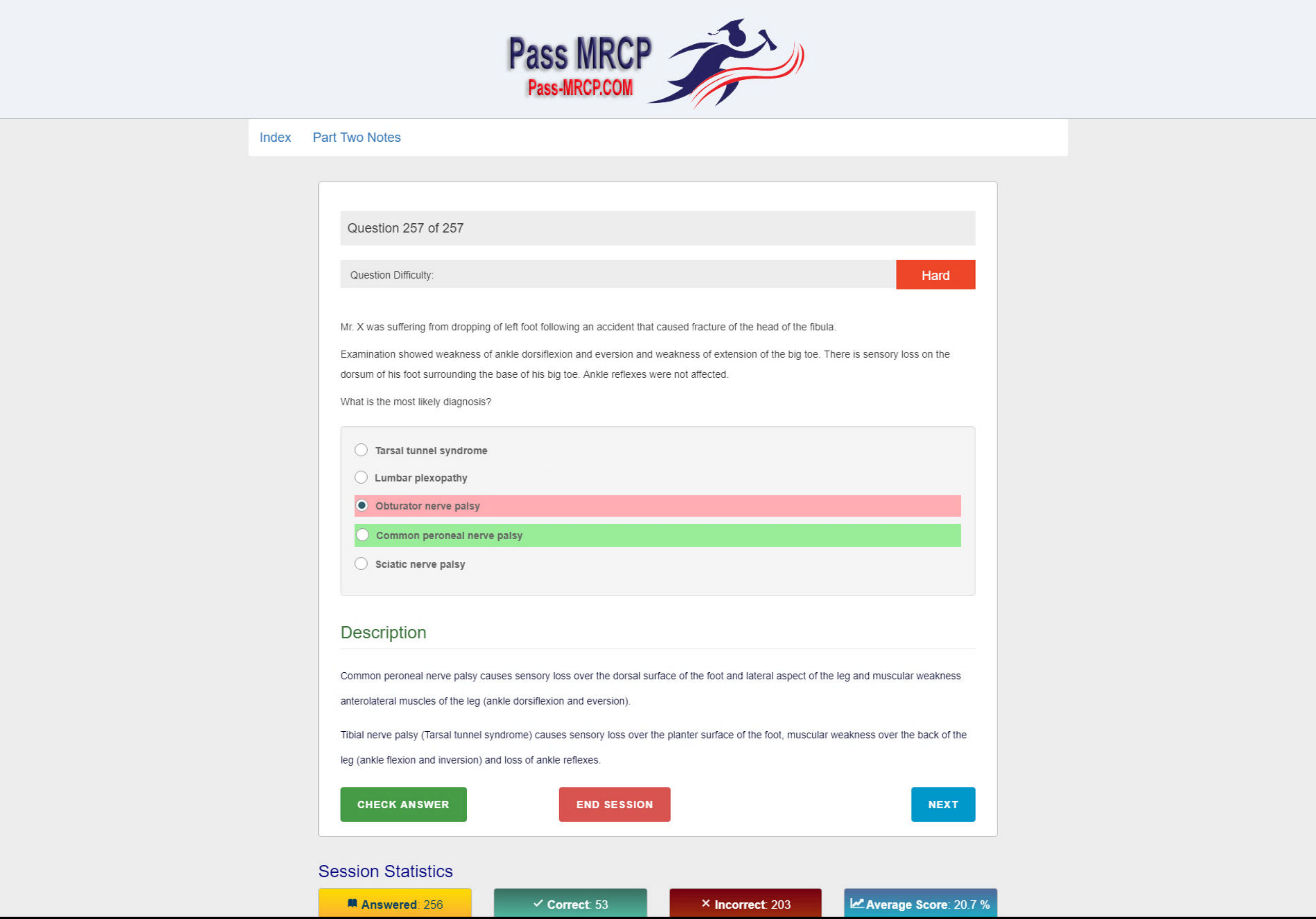
It is manifested by liver cirrhosis, neuropsychiatric features as asymmetric tremor, ataxia, seizures and personality changes and Kayser-Fleischer rings within the cornea.

CJD is associated with myoclonic jerks and dementia. Idiopathic Parkinson disease affects older patients and not associated with hallucinations.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 255 ✓ **Correct**: 53 ✕ **Incorrect**: 202 **Average Score**: 20.78 %



Question 257 of 257

Question Difficulty: Hard

Mr. X was suffering from dropping of left foot following an accident that caused fracture of the head of the fibula.

Examination showed weakness of ankle dorsiflexion and eversion and weakness of extension of the big toe. There is sensory loss on the dorsum of his foot surrounding the base of his big toe. Ankle reflexes were not affected.

What is the most likely diagnosis?

○ **Tarsal tunnel syndrome**
○ **Lumbar plexopathy**
● **Obturator nerve palsy**
○ **Common peroneal nerve palsy**
○ **Sciatic nerve palsy**

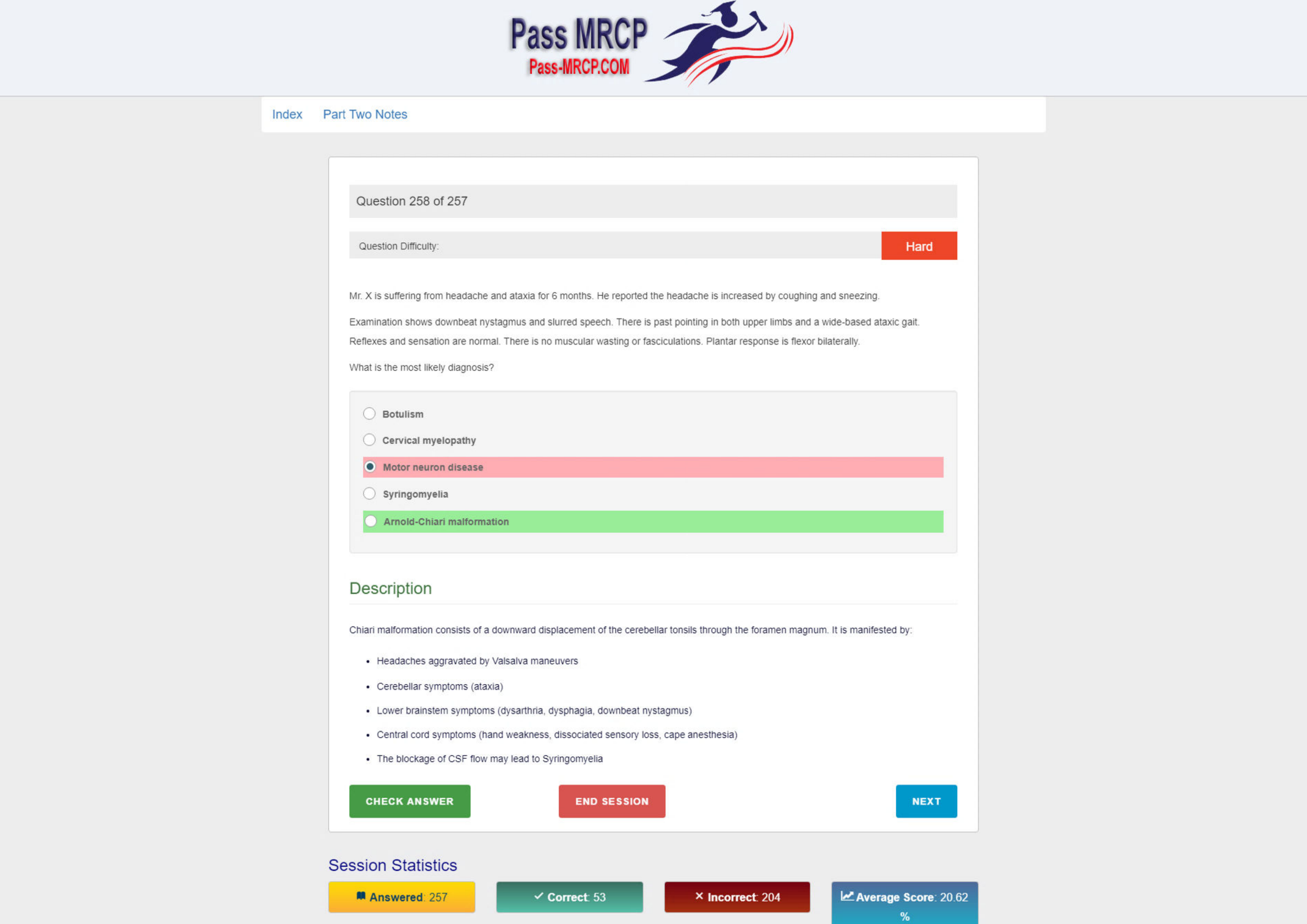
Description

Common peroneal nerve palsy causes sensory loss over the dorsal surface of the foot and lateral aspect of the leg and muscular weakness anterolateral muscles of the leg (ankle dorsiflexion and eversion).

Tibial nerve palsy (Tarsal tunnel syndrome) causes sensory loss over the planter surface of the foot, muscular weakness over the back of the leg (ankle flexion and inversion) and loss of ankle reflexes.

Session Statistics

Answered: 256
Correct: 53
Incorrect: 203
Average Score: 20.7 %



Question 258 of 257

Question Difficulty: **Hard**

Mr. X is suffering from headache and ataxia for 6 months. He reported the headache is increased by coughing and sneezing.

Examination shows downbeat nystagmus and slurred speech. There is past pointing in both upper limbs and a wide-based ataxic gait. Reflexes and sensation are normal. There is no muscular wasting or fasciculations. Plantar response is flexor bilaterally.

What is the most likely diagnosis?

○ **Botulism**
○ **Cervical myelopathy**
● **Motor neuron disease**
○ **Syringomyelia**
○ **Arnold-Chiari malformation**

Description

Chiari malformation consists of a downward displacement of the cerebellar tonsils through the foramen magnum. It is manifested by:

- Headaches aggravated by Valsalva maneuvers
- Cerebellar symptoms (ataxia)
- Lower brainstem symptoms (dysarthria, dysphagia, downbeat nystagmus)
- Central cord symptoms (hand weakness, dissociated sensory loss, cape anesthesia)
- The blockage of CSF flow may lead to Syringomyelia

Session Statistics

Answered: 257
✓ **Correct**: 53
✕ **Incorrect**: 204
Average Score: 20.62 %